

## A Synopsis of the Sawflies (Hymenoptera: Symphyta) of America South of the United States: Tenthredinidae (Allantinae)

DAVID R. SMITH

Systematic Entomology Laboratory, PSI, Agricultural Research Service,  
U.S. Department of Agriculture, % National Museum of Natural History,  
Smithsonian Institution, Washington, DC 20560-0168,  
email: drsmith@sel.barc.usda.gov

---

**Abstract.**—The subfamily Allantinae of the Tenthredinidae is reviewed for the New World south of the United States. Six genera and 40 species are included. *Acidiophora* Konow includes 7 species in South America; *Empria* Lepeletier and Serville, 2 species in Mexico; *Ametastegia* A. Costa, 5 species from Mexico to Costa Rica and an introduced species in Chile and Argentina; *Antholcus* Konow, 1 species in Chile and Argentina; *Macremphytus* MacGillivray, 1 species in Mexico; and *Probleta* Konow, 24 species from southern Mexico to southern Brazil. New species are *Ametastegia hansonii* (Costa Rica), *Probleta corana* (Santa Catarina, Brazil), *P. decorata* (Costa Rica), *P. grossoensis* (Mato Grosso, Brazil; Colombia), *P. malaisei* (Santa Catarina and Paraná, Brazil), *P. mazona* (Amazonas, Brazil), *P. nicklei* (Peru), *P. shannoni* (Rio de Janeiro, Brazil), and *P. siceva* (Peru). *Protoprobleta* Malaise is a new synonym of *Probleta* Konow. Keys and descriptions are given for the genera and species.

---

This is the second part of the treatment of the family Tenthredinidae for America south of the United States. The first part (Smith, in press) included a key for identification of subfamilies and the subfamilies Nematinae, Heterarthrinae, and Tenthredininae. The Allantinae is the third largest subfamily of Tenthredinidae in the region south of the United States and here includes six genera and 40 species.

The format follows that of previous publications on the Symphyta of America south of the United States (Smith 1988, 1990, 1992, in press). The United States and Mexican border is arbitrarily chosen to compliment studies on America north of Mexico (e.g., the catalog by Smith 1979a). Depositories for specimens are given by city names as in the list in Smith (1988), and additional ones are in the Acknowledgments. An asterisk (\*) in front of the original combination of a species indicates that I have seen the type. Extensive synonymies of some of the more common

genera and species in the Nearctic Region are not included; they may be found in Smith (1979a, b). Wing terminology follows that of Huber and Sharkey (1993).

### SUBFAMILY ALLANTINAE

The Allantinae are separated by the forewing venation (Figs. 1, 32, 58): veins M and 1m-cu parallel; veins M and Rs+M meet Sc+R at the same point; vein Rs+M near Sc+R straight, not sinuate; crossvein 2r present; vein 2A+3A complete, connected to 1A by an anal crossvein (a). Members of this subfamily also lack an epicnemium and have the propleurae either pointed or truncated on the meson. The lack of an epicnemium and straight vein Sc-R in the forewing separate Allantinae from those Selandriinae which have an anal crossvein in the forewing.

This subfamily is worldwide, except for Australia, and the greatest concentration of species occurs in eastern and south-

eastern Asia. Smith (1979b) revised the Nearctic fauna, treating 14 genera and 64 species. Of the six genera known to occur south of the United States, three, *Empria* Lepeletier and Serville, *Ametastegia* A. Costa, and *Macremphytus* MacGillivray are northern, but occur in Mexico and one, *Ametastegia*, as far south as Costa Rica. One genus, *Antholcus* Konow, occurs only in Chile and southern Argentina, and the other two, *Acidiophora* Konow and *Probleta* Konow are more widespread in the Neotropics. The genera discussed here are placed in the following three tribes (see also Smith 1979b):

*Acidiophorini*.—Tarsal claw trifid, without basal lobe. Stigma of forewing narrow and elongated and radial crossvein (2r) nearly straight. Each mandible bidentate. All species are impunctate and shining, with red and black colored thorax and fasciate wings. Benson (1938) established this tribe. Widespread in South America. Genus: *Acidiophora*.

*Empriini*.—Tarsal claw bifid, with or

without basal lobe. Forewing normal, stigma not elongated and radial crossvein curved. Each mandible bidentate. Northern and Holarctic, with one genus, *Antholcus* in Chile and southern Argentina. Genera: *Empria*, *Ametastegia*, *Antholcus*.

*Allantini*.—Tarsal claw bifid, with basal lobe, rarely trifid. Forewing normal, stigma not elongated and radial crossvein curved. Mandibles asymmetrical, left mandible with at least two inner teeth and right mandible simple or with only one inner tooth. Clypeus usually deeply emarginated. *Probleta* is widespread whereas *Macremphytus* is Nearctic and occurs only in northern Mexico. Genera: *Probleta*, *Macremphytus*.

Hosts are known for very few of the species treated here. Common hosts for Nearctic species are *Salix* (Salicaceae), *Juglans* (Juglandaceae), *Betula*, *Alnus* (Betulaceae), *Cornus* (Cornaceae), *Rumex*, *Polygonum* (Polygonaceae) and *Fragaria*, *Rosa*, *Amelanchier*, *Rubus*, and other Rosaceae (Smith 1979a, b).

KEY TO GENERA OF ALLANTINAE SOUTH OF THE UNITED STATES

- 1 Tarsal claw trifid, without basal lobe (Fig. 3); forewing with vein 2r straight, stigma long and narrow (Fig. 1), fasciate, darkly infuscated at base and apex with contrasting hyaline band at center (South America) ..... *Acidiophora* Konow
- Tarsal claw bifid, with or without basal lobe (Figs. 23, 31, 49, 60), trifid in only three species of *Probleta*; forewing with vein 2r curved, stigma short, broad (Figs. 32, 58); wings not fasciate as above, but may be yellowish with apex black ..... 2
- 2 Genal carina present; malar space as broad or broader than diameter of front ocellus; clypeus with shallow, V-shaped emargination (Figs. 22, 30) in *Ametastegia* and *Empria*, deeper and circular (Fig. 55) in *Macremphytus* (northern Mexico to Costa Rica) ..... 3
- Genal carina absent; malar space linear or narrower than diameter of front ocellus; clypeus with shallow, V-shaped emargination (Fig. 48) in *Antholcus* or with circular, sometimes deep, emargination (Figs. 66, 68, 70, 74, 76–78) in *Probleta* (southern Mexico to Chile) ... 5
- 3 Anal crossvein of forewing nearly perpendicular, at an angle of 60°–70° (Fig. 32); hind wing without cell M (Fig. 32); tarsal claw with basal lobe (Fig. 31) (each mandible bidentate) (Mexico, Central America) ..... *Ametastegia* A. Costa
- Anal crossvein of forewing oblique, at about a 45° angle to anal veins (as in Fig. 58); hind wing with or without cell M; tarsal claw with or without basal lobe (Figs. 23, 57) (Mexico) ..... 4
- 4 Tarsal claw without basal lobe (Fig. 23); hind wing without cell M; abdomen black, usually with evident paired whitish spots on basal three or more terga (Fig. 24); clypeus shallowly emarginate (Fig. 22); each mandible bidentate ..... *Empria* Lepeletier and Serville

- Tarsal claw with basal lobe (Fig. 57); hind wing with cell M; abdomen reddish brown to orange, without whitish paired spots; clypeus deeply emarginate (Fig. 55); left mandible bidentate, right mandible simple (Fig. 56) ..... *Macremphytus* MacGillivray
- 5 Apical 4 antennal segments not reduced, segments beyond 3rd gradually decreasing in length (Fig. 47) and without ventral membranous areas; malar space narrow but distinct; pulvilli on hind tarsal segments 1-4; mandibles symmetrical, each bidentate (Chile, Argentina) ..... *Antholcus* Konow
- Apical 4 antennal segments reduced, together only slightly longer than 3rd segment (Fig. 59) and apical 4 with ventral membranous areas; malar space linear; pulvilli on hind tarsal segments 3 and 4; mandibles asymmetrical, left mandible with two inner teeth, right mandible with one inner tooth (Mexico to southern Brazil) ..... *Probleta* Konow

Tribe ACIDIOPHORINI

Genus ACIDIOPHORA Konow

*Acidiophora* Konow 1899: 361. Type species: *Acidiophora decora* Konow. By monotypy.  
*Acidiophophora*: Konow 1908b: 161 (error).  
*Acideophora*: Benson 1938: 366 (error).

*Description*.—Antenna long, slender, 1st and 2nd segments each longer than broad; 3rd and 4th segments subequal in length or 3rd slightly longer than 4th; apical 5 segments reduced, together subequal in length to segments 3 and 4 combined (Fig. 2); apical 4 segments with ventral membranous areas, elongate and extending length of each segment. Clypeus truncate to slightly convex; each mandible bidentate; malar space linear; no genal carina; eyes large, lower interocular distance less than eye length, eyes converging below; postocellar area as long as broad. Tarsal claws with 3 teeth, without basal lobe (Fig. 3); hind basitarsus longer than length of remaining tarsal segments combined; pulvilli on seg-

ments 2-4 of hind tarsus, small on segment 2. Forewing with anal crossvein oblique; veins M and 1m-cu subparallel; stigma long and narrow, 9-10× longer than broad; radial crossvein (2r) nearly perpendicular to stigma and straight (Fig. 1). Hind wing with cells Rs and M absent; anal cell sessile or with short petiole; apex of radial cell close to apical margin of wing; male without peripheral vein.  
*Remarks*.—Species of *Acidiophora* are shining black with most or part of the thorax red and have darkly infuscated wings with a contrasting hyaline band at the center. The trifold tarsal claws, long stigma of the forewing, and straight radial crossvein of the forewing are distinctive for the genus. Also, the lightly sclerotized, fragile female ovipositors are all similar (Figs. 6-14) and unique to this genus. Smith (1972b) revised the genus, including six species from Brazil, Peru, and northeastern Argentina.

KEY TO SPECIES OF ACIDIOPHORA

- 1 Thorax, forecoxa, and all femora entirely orange (lance, Fig. 13, lancet, Fig. 14) ..... *konowi* Smith
- Thorax and foreleg mostly black, or at least mesosternum and mesoprescutum black ..... 2
- 2 Mesopleuron entirely black; mesonotum entirely or mostly black, at most with lateral half of each lateral lobe orange ..... 3
- At least upper ¼ or mesopleuron orange; mesonotum mostly orange ..... 5

- 3 Forewing at base uniformly infuscated; pronotum and mesonotum black (lance, Fig. 6, lancet, Fig. 7; male genitalia, Figs. 15, 16) ..... *bokoma* Smith
- Infuscation at base of forewing with a central hyaline spot (Fig. 1); at least lower half of pronotum and usually lateral half of each lateral lobe orange ..... 4
- 4 Anal cell of hind wing with short petiole (Fig. 1); mesonotum mostly black; pronotum except for lower half black (male genitalia, Fig. 18) ..... *larira* Smith
- Anal cell of hind wing sessile; lateral half of mesonotum orange, the black on mesonotum appearing as a broad longitudinal stripe; pronotum orange (lance, Fig. 8, lancet, Fig. 9; male genitalia, Fig. 17) ..... *decora* Konow
- 5 Only upper corner of mesopleuron orange; mesoscutellum black; anal cell of hind wing with short petiole, as in Fig. 1 (lance, Fig. 10; lancet, Fig. 11; male genitalia, Figs. 19, 20) ..... *gecera* Smith
- Upper half or third of mesopleuron and all mesoscutellum orange; anal cell of hind wing sessile ..... 6
- 6 Upper half of mesopleuron orange; foreleg with base of coxa and femur entirely orange; Bolivia (lance, Fig. 12) ..... *manni* Smith
- Upper third of mesopleuron orange; foreleg black; Brazil ..... *longipennis* (Cameron)

Species

**bokoma** Smith. Brazil (Rio de Janeiro, Santa Catarina)

\**Acidiophora bokoma* Smith 1972b: 421, figs. 4, 6, 7, 15, 16. ♀, ♂. "Brasilien, Nova Teutonia, 27° 11' B., 52° 23' L., 300-500 m." (Washington, ♀).—Smith 1979b: 11.

*Remarks.*—This is a mostly black species with the thorax almost entirely black except for the red tegula and small reddish areas on the upper margin of the mesepimeron, upper margin of metapleuron, and narrow line on anterior margin of pronotum. The basal portion of the forewing is uniformly infuscate, lacking a central hyaline area, and the anal cell of the hind wing is sessile. The lance and lancet are in Figs. 6, 7, and the male genitalia in Figs. 15, 16.

*Material examined.*—BRAZIL: Itatiaya, 700 m, Est. do Rio, 19-3-932 (1 ♀); holotype ♀ labeled "Brasilien, Nova Teutonia, 27°11'B, 52°23'L, 300-500 m, XI-17-1964, Fritz Plaumann"; about 15 other specimens from the type locality, collected in February, March, November, and December.

**decora** Konow. Argentina (Misiones); Brazil (Espirito Santo, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina).

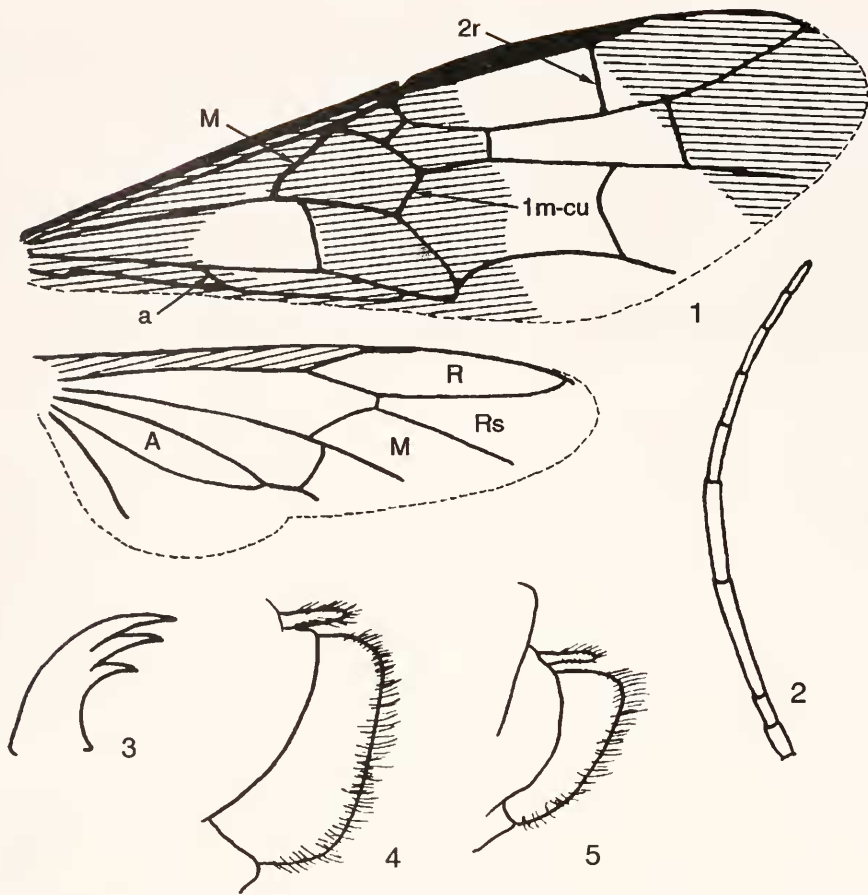
\**Acidiophora decora* Konow 1899: 361. ♂. "Brasilien (Rio Grande do Sul)" (Eberswalde, ♂).—Konow 1901: 61-62 (♀).—Konow 1905: 100.—Smith 1972b: 421-423, figs. 8, 9, 17 (♀, ♂; syn.: *nebulosa* Jörgensen).—Smith 1979b: 11.—Oehlke and Wudowenz 1984: 376 (holotype).

\**Acidiophora nebulosa* Jörgensen 1913: 276-278, pl. 27, figs. 9, 10. ♂. "Monte de Bonpland" (La Plata, ♂).

*Remarks.*—The black mesopleuron, broad black longitudinal stripe on the mesonotum, red pronotum, sessile anal cell of the hind wing, and presence of a hyaline area in the basal infuscated portion of the forewing will distinguish this species. The lance and lancet are in Figs. 8, 9, and the male genitalia in Fig. 17.

The lectotype ♂ of *A. decora*, here designated to fix the identity of this species, is at Eberswalde, labeled "R. Grande do Sul," "Coll. Konow," "Typus [red]," and "*Acidiophora decora* Konow, Brasil." Konow did not state how many specimens he had, and there are two other specimens at Eberswalde, one of a different species de-





Figs. 1-5. *Acidiophora*. 1, Forewing and hind wing of *A. gecera*. 2, Antenna of *A. gecera*. 3, Tarsal claw of *A. gecera*. 4, Sheath of *A. bokama*. 5, Sheath of *A. gecera*.

scribed as *A. konowi* (Smith 1972b). Jörgensen described *A. nebulosa* from "Sólo un ♂"; the holotype ♂, at La Plata, is labeled "25-IX-10, Misiones, Bompland, Jörgensen," "*Acidiophora nebulosa*, n. sp." The left forewing is missing.

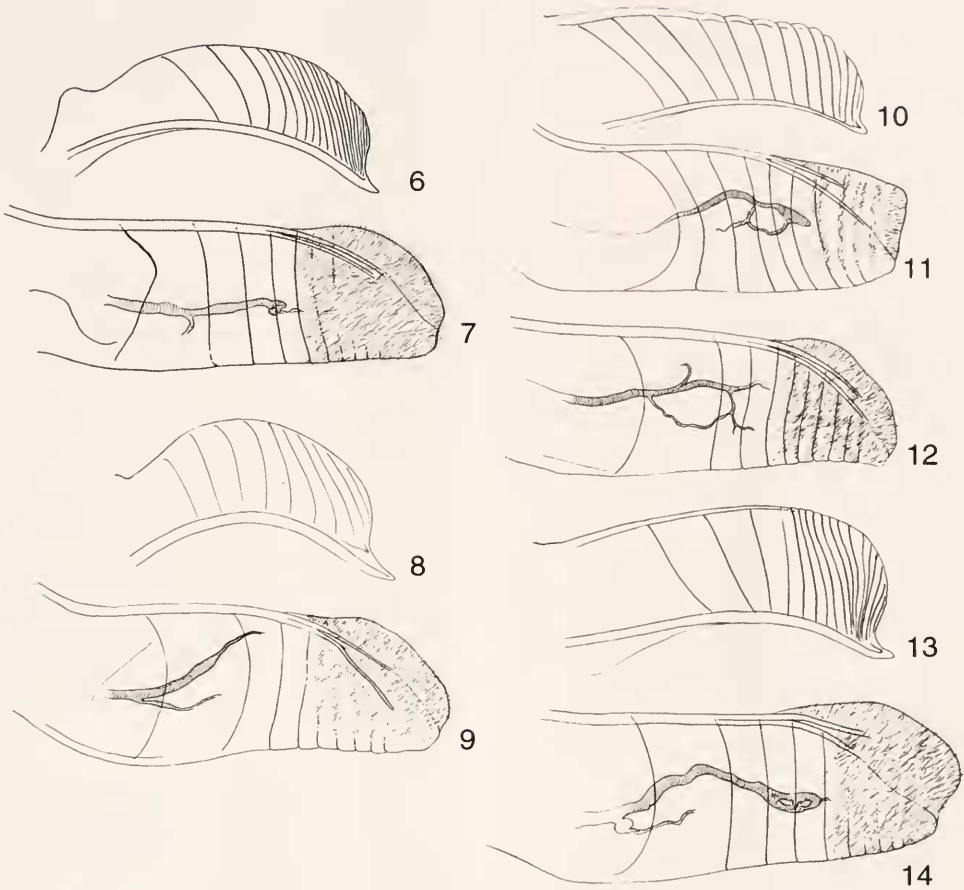
**Material examined.**—About 50 specimens in addition to types mentioned above; only states and months of capture are given: see Smith (1972b) for specific localities. ARGENTINA: Misiones (September). BRAZIL: Espírito Santo (February, October); Paraná (November); Rio Grande do Sul (type of *A. decora*); Rio de Janeiro (April, September, November); Santa Catarina (September, October).

**gecera** Smith. Argentina (Formosa); Brazil (Santa Catarina); Paraguay

\**Acidiophora gecera* Smith 1972b: 423, figs. 1-3, 5, 10, 11, 19, 20. ♀, ♂. "Brasilien, Nova Teutonia, 27° 11' B., 52° 23' L., 300-500 m." (Washington, ♀).—Smith 1979b: 12.

**Remarks.**—The red mesonotum with the prescutum and scutellum black, red upper corner of the mesopleuron, and petiolate anal cell of the hind wing will distinguish this species. The lance and lancet are in Figs. 10, 11, and the male genitalia in Figs. 19, 20.

**Material examined.**—ARGENTINA: Formosa (1 ♀). BRAZIL: Holotype ♀ labeled



Figs. 6–14. *Acidiophora*, female ovipositors. 6, *A. bokoma*, lance. 7, *A. bokoma*, lancet. 8, *A. decora*, lance. 9, *A. decora*, lancet. 10, *A. gecera*, lance. 11, *A. gecera*, lancet. 12, *A. manni*, lancet. 13, *A. konowi*, lance. 14, *A. konowi*, lancet.

“Brasilien, Nova Teutonia, 27°11’B, 52°23’L, 300–500 m, 16-III-1966, Fritz Plau-  
mann.”; about 15 specimens, all from the  
type locality collected in February, March,  
and April (see Smith 1972b). PARAGUAY:  
Villarica (1 ♀).

**konowi** Smith. Bolivia; Peru

\**Acidiophora konowi* Smith 1972b: 423–425, figs.  
13, 14. ♀. “Vilcanota, Peru” (Eberswalde,  
♀).—Smith 1979b: 12.—Oehlke and Wud-  
owenz 1984: 390 (holotype).

**Remarks.**—The red thorax, forecoxa, for-  
efemur, basal hyaline spot in the basal in-  
fused area of the forewing, and sessile  
anal cell of the hind wing will distinguish

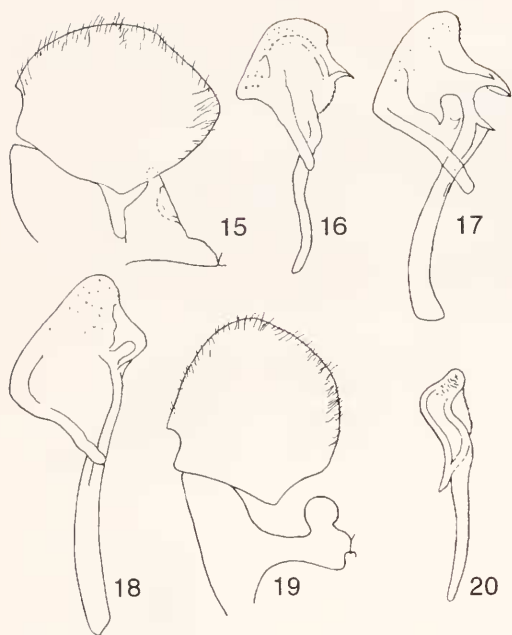
this species. The lance and lancet are in  
Figs. 13, 14.

**Material examined.**—BOLIVIA: Chiqui-  
tos, Bolivia, 300 m, March 1918 (1 ♀, at  
Pittsburgh). PERU: Holotype ♀ labeled  
“Vilcanota, Peru,” “Coll. Konow,” and  
with the holotype name label.

**larira** Smith. Brazil (Rio de Janeiro)

\**Acidiophora larira* Smith 1972b: 425, fig. 18. ♂.  
“Rio de Janeiro, Dist. Federal, Brasil” (Wash-  
ington, ♂).—Smith 1979b: 12.

**Remarks.**—The mostly black thorax with  
some small reddish areas on the lower  
half of the pronotum, tegula, spot on lat-  
eral side of each mesonotal lateral lobe,



Figs. 15–20. *Acidiophora*, male genitalia. 15, *A. bokoma*, harpe and parapenis. 16, *A. bokoma*, penis valve. 17, *A. decora*, penis valve. 18, *A. larira*, penis vlv. 19, *A. gecera*, harpe and parapenis. 20, *A. gecera*, penis valve.

upper margin of mesepimeron, upper portion of metapleuron orange, and hyaline spot in center of basal infuscated area of the forewing will distinguish *A. larira* from other *Acidiophora*. The legs and abdomen are black, and the anal cell of the hind wing is petiolate. The male genitalia are in Fig. 18. I saw one female from "Rio de Jan." collected in November; the coloration is similar to that of the female.

*Material examined*.—BRAZIL: Holotype ♂ labeled "Rio de Janeiro, Dist. Federal, Brasil," "Setembro, 1938," "Servico Febro, Amarela, M.E.S., Bras.," "R.C. Shannon, coll.,"; Rio de Janeiro (1 ♀).

### *longipennis* (Cameron). Brazil

\**Taxonus longipennis* Cameron 1878: 141–142. ♀.

"Brazil" (London, ♀).—Kirby 1882: 211.—

Dalla Torre 1894: 112.—Konow 1905: 109.

*Probleta longipennis*: Konow 1908b: 161.

*Acidiophora longipennis*: Smith 1979b: 12.

*Female*.—Length, 10.0 mm. Head and

antenna black. Thorax orange with triangular mark on mesoprescutum, mesosternum, and about lower two-thirds of mesopleuron black. Legs and abdomen black. Forewing with infuscation as in Fig. 1, with central hyaline spot in infuscated basal area of forewing. Anal cell of hind wing sessile.

*Remarks*.—I overlooked this species in my 1972b revision and did not realize it belonged to *Acidiophora* until I examined the type in 1978. I have not seen other specimens that resemble this species. The coloration is very close to *A. gecera* and *A. manni*, but closer to the latter as indicated in the key. The orange upper third of the mesopleuron, orange mesonotum except for the black mark on the prescutum, and the black legs appear to separate *A. longipennis* from the others. Since *A. longipennis* is from "Brazil" and *A. manni* is known only in Bolivia, there are apparent slight color differences, and I have not seen other specimens, I prefer to keep *A. longipennis* separate at present.

*Material examined*.—Holotype ♀, BM 1.362, labeled "Braz.," "*Taxonus longipennis* Cam., Type, Brazil."

### *manni* Smith. Bolivia

\**Acidiophora manni* Smith 1972b: 425–426, fig. 12. ♀. "Huachi, Beni, Bolivia" (Washington, ♀).—Smith 1979b: 12.

*Remarks*.—The red thorax with the mesosternum, lower half of the mesopleuron, and triangular spot on mesoprescutum black, presence of a central hyaline spot in the infuscated basal area of the forewing, and sessile anal cell of the hind wing will distinguish this species. The lancet is in Fig. 12.

*Material examined*.—BOLIVIA: Holotype ♀ labeled "Huachi, Beni, Bolivia, Wm. M. Mann," "September," "Mulford Bio. Expl. 1021–1922."

### Tribe EMPRIINI

### Genus *EMPRIA* Lepeletier and Serville

*Empria* Lepeletier and Serville 1828: 571. Type species: *Dolerus (Empria) pallimacula* Lepeletier. Desig. by Brullé 1846.

For the extensive generic synonymy, see Smith (1979b).

*Description.*—Antenna slender, 1st and 2nd segments each slightly longer than broad or 2nd segment about as long as broad, 3rd segment slightly longer than 4th segment; segments beyond 3rd gradually decreasing in length (Fig. 21); without ventral membranous areas on ventral side of apical segments. Clypeus shallowly emarginate, emargination usually broadly V-shaped, sometimes with small tooth at center (Fig. 22); malar space broad, nearly twice diameter of front ocellus; genal carina present, extending to top of eye; each mandible bidentate. Tarsal claw with or without inner tooth, without basal lobe (Fig. 23). Forewing with anal crossvein (a) oblique (similar to Fig. 58); first cubital crossvein (Rs) present or absent. Hind wing with cell M, cell Rs ab-

sent; anal cell petiolate; male without peripheral vein. Pulvilli on tarsal segments 1–4. Abdominal terga commonly with paired whitish spots (Fig. 24), not always obvious in some specimens.

*Remarks.*—*Empria* may be confused with *Ametastegia* in Mexico where both genera occur, but *Ametastegia* lacks cell M in the hind wing, has the anal crossvein of the forewing nearly perpendicular, has a basal lobe on the tarsal claws, and lacks whitish paired spots on the abdominal terga. *Empria* is a relatively large Holarctic genus with about 11 species in North America north of Mexico (Smith 1979b). Two species of this northern genus occur in Mexico. Hosts are not known for the two Mexican species, but Nearctic species feed on *Rosa*, *Fragaria*, *Potentilla*, *Rubus* (Rosaceae), *Betula*, *Corylus*, *Alnus* (Betulaceae), and *Salix* (Salicaceae) (Smith 1979a, b).

KEY TO SPECIES OF *EMPRIA*

- 1 Antenna long, more than 2× head width, segments 5–8 about 2½× longer than broad; abdominal white spots faint; lancet with low, rounded serrulae and small anterior subbasal tooth (Fig. 25); male genitalia in Fig. 27 ..... *eosa* Smith
- Antenna stouter, less than 2× head width, segments 5–8 about 2× longer than broad; abdominal white spots distinct (Fig. 24); lancet with lobelike serrulae, each with a single large anterior subbasal tooth (Fig. 26); male genitalia in Fig. 28 .... *mexicana* (Cameron)

Species

*eosa* Smith. Mexico (D.F., Jalisco, México, Michoacán, Morelos, Veracruz)

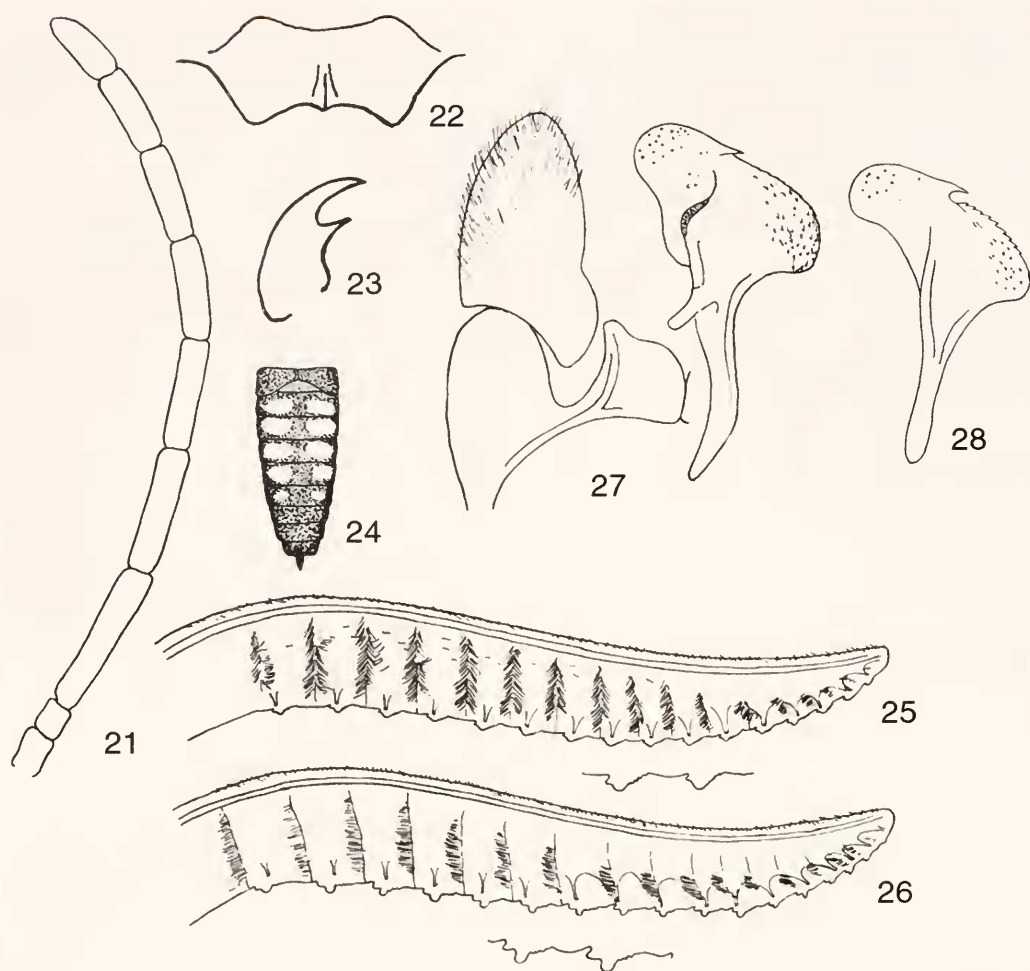
\**Empria eosa* Smith 1979b: 46–47, figs. 88, 92, 110, 111. ♀, ♂. “Tancitaro, Michoacán, Mexico, Alt. 11,000 ft., Hy. 58” (Champaign, ♀).

*Female, male.*—Length, female, 6.8–7.0 mm; male, 6.6–6.8 mm. Antenna and head black, labrum brownish. Thorax black with posterior margin of pronotum brownish; anterior edge of tegula may be white. Legs black with extreme apex of forefemur and all foretibia white. Abdomen black; posterior margin of each segment sometimes with narrow white band;

paired white spots absent, at most represented by brownish areas on tergites 2–7. Wings darkly, uniformly infuscated; veins and stigma black. Antennal length more than 2× head width, usually about 2.4×. Lancet in Fig. 25; male genitalia in Fig. 27.

*Remarks.*—Unlike most species of *Empria*, the white spots on the dorsum of the abdomen are faint to absent in this species. The long antennae, lancet, and male genitalia should be used to separate this species from *E. mexicana*. It has been collected only at high elevations in central Mexico; label data that includes elevations are all 8300’ or above. One specimen was collected in a “pine grass” habitat.





Figs. 21–28. *Empria*. 21, Antenna of *E. cosa*. 22, Clypeus of *E. cosa*. 23, Tarsal claw of *E. cosa*. 24, Abdomen, dorsal, of *E. mexicana*. 25, Lancet of *E. cosa*. 26, Lancet of *E. mexicana*. 27, Harpe and parapenis, and penis valve of *E. cosa*. 28, Penis valve of *E. mexicana*.

*Material examined*.—MEXICO: Holotype ♀ labeled "Tancitaro, Michoacan, Mexico, Alt. 11,000 ft., Hy. 58, July 19, 1940, on Tessel, Hoogstraal and Knight." I have seen specimens from the states of Jalisco, México, Michoacán, Morelos, and Veracruz. All collections are from mid-June to August. See Smith (1979b) for specific localities.

*mexicana* (Cameron). Mexico (Durango); U.S.A. (Arizona, New Mexico)

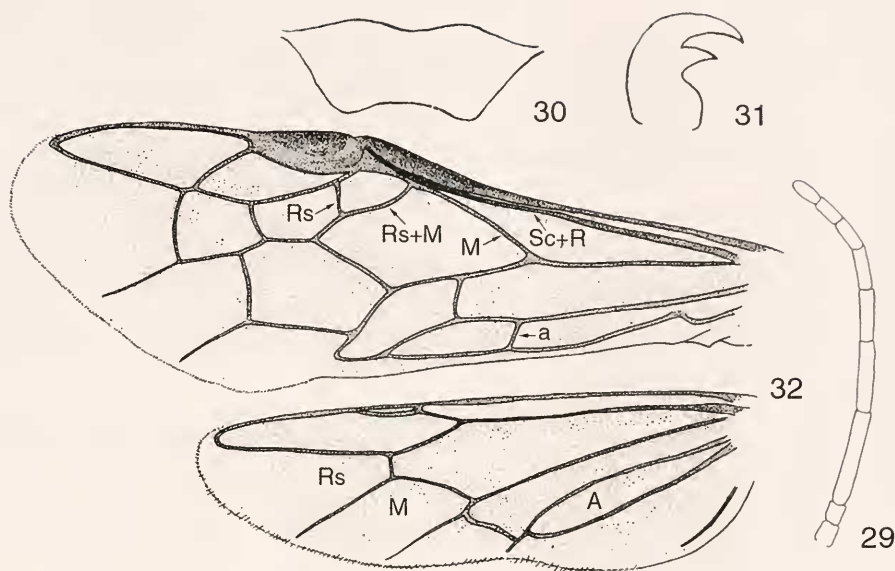
\**Poecilosoma mexicana* Cameron 1883: 34, pl. 2, fig. 9. ♀. "Mexico, Milpas in Durango 5900

feet" (London, ♀).—Dalla Torre 1894: 128.—Konow 1905: 104.

*Empria mexicana*: Smith 1979a: 102.—Smith 1979b: 57–58, figs. 96, 108 (description; distribution; syn.: *arizonensis* Rohwer).

\**Empria arizonensis* Rohwer 1910: 174. ♀. "Arizona" (Washington, ♀).—Ross 1936: 174 (as a syn of *E. obscurata* (Cresson)).

*Female, male*.—Length, female, 6.6–6.9 mm; male, 6.0–6.3 mm. Antenna and head black; labrum brownish. Thorax black with posterior margin of pronotum and tegula white. Legs black with extreme apex of forefemur, outer surface of foreti-



Figs. 29–32. *Ametastegia*. 29, Antenna of *A. glabrata*. 30, Clypeus of *A. articulata*. 31, Tarsal claw of *A. articulata*. 32, Forewing and hind wing of *A. glabrata*.

bia, and basal quarter of midtibia and hind tibia white. Abdomen black, narrow white band sometimes present on posterior margin of each segment; paired white spots on tergites 2–5 or 2–6, sometimes brownish and not evident. Wings darkly, uniformly infuscated; veins and stigma black. Antennal length about  $2\times$  or less head width. Female lancet in Fig. 26; male genitalia in Fig. 28.

**Remarks.**—This species is also black, but the white spots on the dorsum of the abdomen are usually more evident than in *E. cosa*. See the preceding key for species separation. As *E. cosa*, this species also occurs at high elevations in Mexico, but in northern Mexico and southeastern United States.

**Material examined.**—MEXICO: Holotype ♀ of *P. mexicanus*, BM #1.361, labeled "Milpas, Mex., 5900 ft., Forrer" and with name labels. Other specimens only from the El Salto and La Cuidad areas in Durango, at elevations of 8200' or higher. UNITED STATES: Holotype ♀ of *E. arizonensis* labeled "Ariz." See Smith (1979b)

for specific localities; all collections are in June and July, with one in August.

### Genus AMETASTEGIA A. Costa

*Ametastegia* A. Costa 1882: 198. Type species: *Ametastegia fulvipes* A. Costa. By monotypy.

For the extensive generic synonymy, see Smith (1979b).

**Description.**—Antenna moderately long,  $2\times$  or more head width, 1st and 2nd segments each as long as broad; 3rd segment longer than 4th segment; segments beyond third gradually decreasing in length (Fig. 29); without ventral membranous areas on apical segments. Clypeus shallowly emarginate, emargination truncate or shallowly U- to V-shaped, sometimes with tooth at center (Fig. 30); genal carina present, extending to top of eye; each mandible bidentate; malar space distinct, about as broad as diameter of front ocellus. Tarsal claw with short inner tooth and small, rounded basal lobe (Fig. 31); hind basitarsus subequal in length to or shorter than length of remaining tarsal segments combined; pulvilli on hind tarsal segments

1–4. Forewing with 1st cubital crossvein (Rs) present or absent (absent in Mexican and Central American species; present in species introduced into Chile and Argentina); anal crossvein (a) nearly perpendicular (Fig. 32). Hind wing without cells Rs and M; anal cell present, petiolate (Fig. 32); male without peripheral vein.

*Remarks.*—See the discussion under *Empria* for characters distinguishing *Ametastegia* from that genus. *Ametastegia* is a Holarctic genus with 15 species in North America (Smith 1979b). Four species are found in Mexico south to Costa Rica, and another has been introduced into Chile

and Argentina. Host plants for Nearctic species include *Rumex*, *Polygonum* (Polygonaceae), *Viola* (Violaceae), and *Salix* (Salicaceae). Larvae prefer to bore into soft substances to form a pupal cell. These may be soft wood, stems of various plants, or fruit. If the host plant is near fruit orchards, such as apples or pears, mature larvae may bore into the fruit and form a cell to pupate. Damage to fruit is only from boring and forming a cell for a pupation site and is not caused by feeding. Because pupation sites are commonly in soft substances such as fruit, species are easily transported by commerce.

#### KEY TO SPECIES OF AMETASTEGIA

- 1 First cubital crossvein (Rs) of forewing present (Fig. 32) (black; labrum whitish; legs orange with extreme bases of coxae and hind tarsus black; lancet in Fig. 33; male genitalia in Figs. 43, 44); Chile, Argentina ..... *glabrata* (Fallén)
- First cubital crossvein (Rs) of forewing absent; Mexico to Central America ..... 2
- 2 Abdomen black ..... 3
- Abdomen partly orange or reddish brown ..... 4
- 3 Coxae, trochanters, and basal portion of femora white; lancet in Fig. 34; male genitalia in Figs. 37, 38; mesepisternum with posteroventral white spot ..... *articulata* (Klug)
- Legs black, sometimes whitish on tibiae only; lancet in Fig. 35; male genitalia in Figs. 39, 40; mesepisternum black ..... *mexicana* (Cameron)
- 4 Abdomen orange with basal plates and apical 2 segments black; costa and stigma of forewing orange brown; legs orange with bases of coxae black; malar space equal to diameter of front ocellus; clypeus short, about 3× broader than long; head shining; male genitalia in Figs. 41, 42 ..... *championi* (Cameron)
- Abdomen variable, usually orange to reddish brown with basal plates and apical segments black, but may be mostly black with margins of terga or only a few terga reddish brown; veins and stigma of forewing black; legs whitish to orange with bases of fore- and midcoxae and most of hind coxa, apical third or so of hind tibia and tarsus blackish; malar space twice diameter of front ocellus; clypeus long, only about 2× broader than long; head roughened and dull between ocelli and antennae; male genitalia in Figs. 45, 46 (lancet in Fig. 36) ..... *hansoni*, new species

#### Species

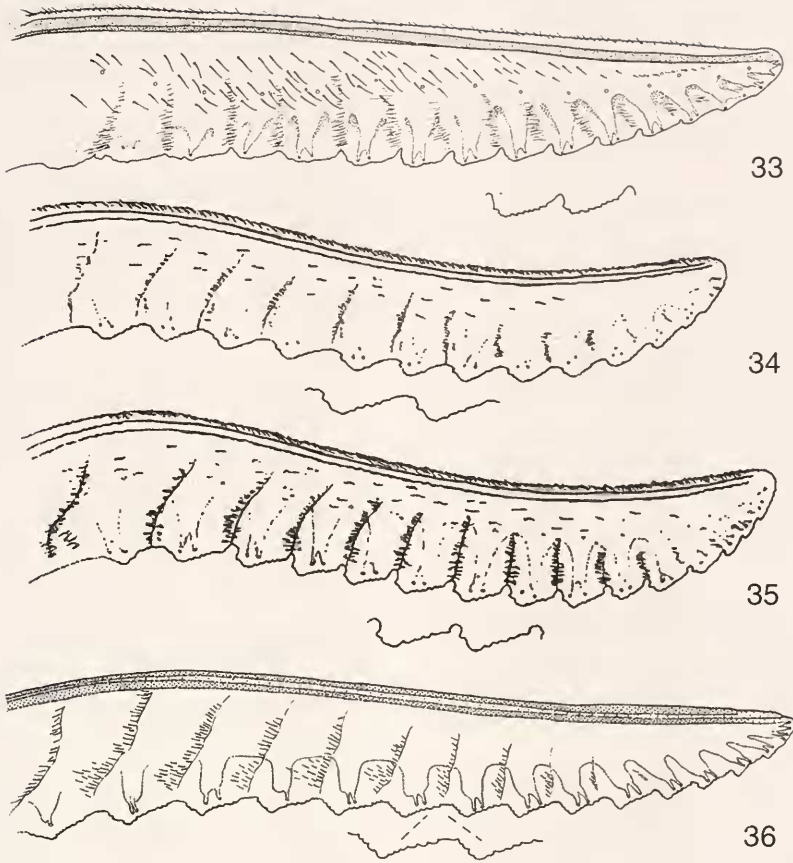
*articulata* (Klug). Mexico (Oaxaca, Veracruz); Southeastern Canada and eastern United States west to Minnesota, Texas.

\**Tenthredo* (*Emphytus*) *articulatus* Klug 1818: 284. ♂. "Baltimore in Nordamerika" (Berlin,

♂). Dating of Klug's descriptions from Taeger and Blank (1996).

*Ametastegia articulata*: Smith 1973a: 29.—Smith 1979a: 103.—Smith 1979b: 76–78, figs. 155, 166, 167, 179–184 (description, adults and larvae; hosts; syn.: *aztecus* Cameron).

\**Emphytus aztecus* Cameron 1888: 163. ♂. "Mexico, Orizaba" (London, ♂).—Dalla Torre



Figs. 33–36. *Ametastegia*, female lancets. 33, *A. glabrata*. 34, *A. articulata*. 35, *A. mexicana*. 36, *A. hansonii*.

1894: 113.—Cameron 1899: 467.—Konow 1905: 105.

*Host plants*.—*Rumex* spp. and *Polygonum erectum* L. (Polygonaceae) have been recorded in the United States.

*Female, male*.—Length, female, 5.8–6.3 mm; male, 4.7–5.0 mm. Antenna and head black; clypeus whitish or black; labrum and maxillary and labial palpi whitish. Thorax black with posterior margin of pronotum white; tegula brownish to white; small white spot usually present on lower posterior margin of mesepisternum (sometimes absent). Legs usually white to yellow with extreme bases of coxae, apical half of hind tibia, and all hind tarsus black; occasionally legs mostly black with coxae, trochanters, and basal halves of

femora white. Abdomen black, sometimes each segment with narrow white band on posterior margin; sheath black. Wings lightly, uniformly infuscated; veins and stigma black. Female lancet in Fig. 34; male genitalia in Figs. 37, 38.

*Remarks*.—See Smith (1979b) for further references and synonymy and notes on Klug's type. This is a common species in eastern North America. The few specimens I have seen from Mexico are identical to ones from the U.S.

*Material examined*.—MEXICO: Holotype ♂ of *E. aztecus*, BM #1.345, labeled "*Emphytus aztecus* Cam.," "Orizaba, H.H.S. & F.D.G., Dec. 1887."; Veracruz; Oaxaca, 2 mi NW Oaxaca, IV-13-53 (at Berkeley). See Smith (1979b) for United States records.



**championi** (Cameron). Guatemala

*\*Euphytus championi* Cameron 1883: 35, pl. 2, fig. 13. ♀. "Guatemala, Purula" (London, ♀).—Dalla Torre 1894: 114 (*championii*).—Kownow 1905: 105.

*Ametastegia championi*: Smith 1972a: 258.—Smith 1979b: 80–81, figs. 171, 172.

*Female, male*.—Length, female, 8.0 mm; male, 4.8 mm. Antenna and head black. Thorax black with posterior margin of pronotum, tegula, and spot on mesepisternum whitish. Legs yellow orange with bases of coxae black; midtarsus, hind tarsus, apical third of hind tibia, extreme apex of midtibia, and apical 4 foretarsal segments lightly infuscated. Abdomen orange with basal plates and sheath black; in male, apical two abdominal segments and coxae black. Wings uniformly infuscated; veins and stigma black. Male genitalia in Figs. 41, 42.

*Remarks*.—The only female examined was the holotype. I did not examine the lancet.

*Material examined*.—GUATEMALA: Holotype ♀, BM #1.346, labeled "Purula, Guatemala, Champion" and with name labels; Baja Verapaz, 5 km E Purula, 1530–1650 m (1 ♂); Ingenio, April 28, 1926 (1 ♂).

I examined one female that is similar to *A. championi* but differs from the holotype by having black legs (except for white at the extreme apices of the femora and bases of the tibiae) and black wing venation. This could be a color variant, but I am unable to evaluate it because I could not compare the lancet to that of the holotype. The specimen is labeled "Guatemala, Depto. Quiche, 14° 55.176'N, 91° 06.342'W, south of Chichicastenango, Molino L. Tesoro, 1900 m, along Rio Selapec, M.E. Irwin, 20 May 1997," "Schlinger Foundation Guatemala Expedition May 1997" (at Eberswalde).

**glabrata** (Fallén). Argentina (Río Negro); Chile (Orsono, Valdivia); transcontinental in southern Canada and U.S.A; Europe to Siberia.

*Tenthredo glabrata* Fallén 1808: 108.

*Ametastegia glabrata*: Smith 1979a: 104.—Smith 1979b: 85–87, figs. 158, 168, 169 (description, distribution, hosts).—Carrillo et al. 1990: 5–7 (first record for Chile; biology).—Smith and Pérez 1995: 105.

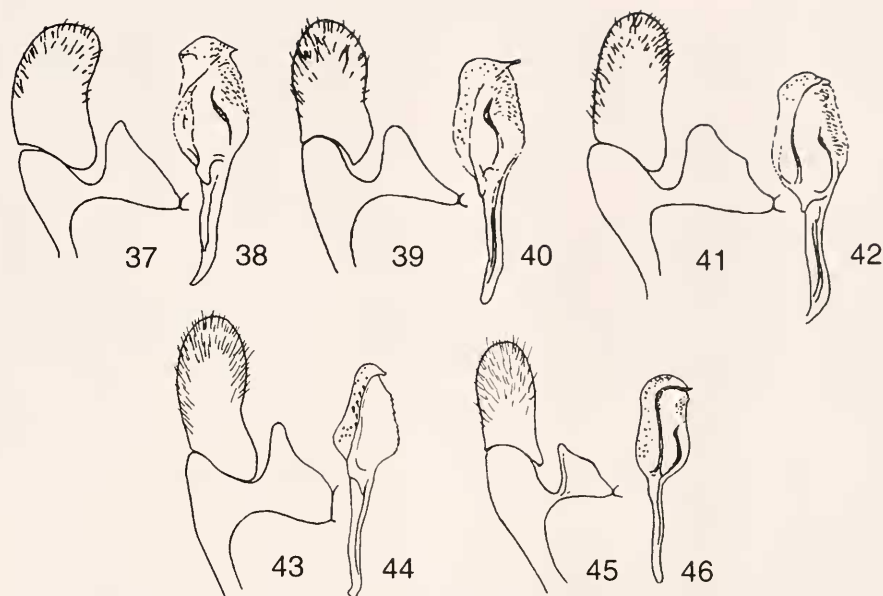
*Host plants*.—*Rumex crispus* L., *Rumex* spp., *Polygonum* spp. (Polygonaceae).

*Female, male*.—Length, female, 7.4–7.8 mm; male, 6.1–6.4 mm. Antenna and head black; labrum whitish. Thorax black. Legs orange with extreme bases of coxae and hind tarsus black. Abdomen black. Wings lightly, uniformly infuscated; veins and stigma black. Forewing with first sector of vein Rs present (Fig. 32). Female lancet in Fig. 33; male genitalia in Figs. 43, 44.

*Remarks*.—See Smith (1979b) for further synonymy, description, and distribution. This is a rather recent introduction into Chile (Carillo et al. 1990) and Argentina (first country record, see below). Several biological references to this species in the North American literature are Jack (1893), Dustan and Gilliatt (1916), Chittenden and Titus (1905), and Newcomer (1916). It is known as the "dock sawfly" (the "dock false-worm" in some early literature) and has gained significance as an occasional pest of apples. If the larval host is in the vicinity of fruit orchards, larvae may use the fruits as a pupation site thus lowering the quality of the fruit.

This is the only species of *Ametastegia* south of the United States with the first sector of vein Rs present in the forewing (Fig. 32).

*Material examined*.—ARGENTINA: Río Negro, El Bolsón, near plaza, 280 m, 9-XII-1997, U.p.t., C. and M. Vardy. CHILE: Orsono, 5–18–87, in stem Frambuesco (1 ♀); Valdivia, Dic. 1980; Aysen, Río Simpson, I-24–1978 (1 ♀).



Figs. 37–46. *Ametastegia*, male genitalia. 37, *A. articulata*, harpe and parapenis. 38, Penis valve of *A. articulata*. 39, Harpe and parapenis of *A. mexicana*. 40, Penis valve of *A. mexicana*. 41, Harpe and parapenis of *A. championi*. 42, Penis valve of *A. championi*. 43, Harpe and parapenis of *A. glabrata*. 44, Penis valve of *A. glabrata*. 45, Harpe and parapenis of *A. hansonii*. 46, Penis valve of *A. hansonii*.

***hansonii* Smith, new species.** Costa Rica

*Ametastegia hansonii* Smith

*Female*.—Length, 6.5–7.0 mm. Antenna and head black; palpi brownish. Thorax black with posterior margin of pronotum, tegula, and spot on ventroposterior mesepisternum white. Abdomen usually blackish with apical and lateral margins of terga and apical sterna orange to reddish brown; sometimes mostly reddish brown with basal plates and apical 3 or 4 segments black; sheath black. Legs whitish to orange with bases of fore- and midcoxae, hind coxa except narrow apical margin, apical third or so of hindtibia, and tarsi blackish, always darker than rest of legs. Wings moderately, uniformly black infuscated; veins and stigma black. Antennal length about  $2.75\times$  head width. Malar space twice diameter of front ocellus; clypeus long, only about  $2\times$  broader than long; postocellar area  $1.3\times$  broader than long. Head between ocelli and antenna roughened and dull. Hindbasitarsus sub-

equal in length to length of remaining tarsal segments combined. Lancet in Fig. 36.

*Male*.—Length, 5.5 mm. Similar to female but usually abdomen more orange with basal plates and apical 3 or 4 segments black, but variation occurs as in female. Genitalia in Figs. 45, 46.

*Holotype*.—♀, “Costa Rica: Heredia: Vara Blanca, Finca Georgina, 2100 m, VII–VIII-1990, P. Hanson (INBio).

*Paratypes*.—COSTA RICA: Same data as holotype (2 ♀, 8 ♂); same data except for dates, V–VI-1990 (2 ♂), IX-1989 (1 ♂), XI–XII-1989 (1 ♂), III–IV-1990 (1 ♂); Sta Clara, Reventazon [with folded label “La Palma, 1600 m, IV-1905, P. Biolley”] (1 ♀); San José, Zurqui de Moravia, 1600 m, IV-1995, P. Hanson (1 ♂), same except VI-1995 (1 ♀); Quebrada Segunda, P.N. Tapanti, 1250 m, Prov. Cartago, G. Mora, Jun. 1992, L-N 194000, 560000, Costa Rica INBIO CRI000374857 (1 ♂). Deposited at INBio, Universidad de Costa Rica, Washington.

*Etymology*.—Named for Paul E. Hanson, Universidad de Costa Rica, San José, who

has done extensive surveys in Costa Rica and provided considerable study material.

*Remarks.*—The characters outlined in the key separate this species from *A. championi*, the species with which it is most likely to be confused, and other *Ametastegia*. The dull, roughened area of the head between the ocelli and antennae is not found in other species treated here; all have this area is smooth and shining. Most specimens were taken in Malaise traps on the edge of a strip of forest remaining in a ravine.

**mexicana** (Cameron). Guatemala; Mexico (Durango, Hidalgo, Jalisco, México, Michoacán, Puebla, Morelos, Querétaro).

\**Emphytus mexicanus* Cameron 1883: 35. ♀. "Mexico" (Genève, ♀).—Dalla Torre 1894: 119.—Konow 1905: 106.

*Ametastegia mexicana*: Smith 1972a: 258.—Smith 1979b: 87–88, figs. 159, 175–176 (description, distribution).

*Female, male.*—Length, female, 6.3–6.8 mm; male, 5.8–6.1 mm. Antenna and head black; labrum and maxillary and labial palpi brownish to whitish. Thorax black with posterior margin of pronotum white and tegula brownish to black. Legs mostly black with extreme apex of forefemur and all foretibia and foretarsus white; sometimes midtibia and base of hind tibia white. Abdomen and sheath black. Wings uniformly, lightly infuscated; veins and stigma black. Female lancet in Fig. 35; male genitalia in Figs. 39, 40.

*Remarks.*—This species is most likely confused with *A. articulata*. In *A. mexicana*, the legs are mostly black, whereas in *A. articulata* the coxae, trochanters, and basal portions of the femora are white. *Ametastegia articulata* has been seen only from Veracruz and Oaxaca. Most *A. mexicana* are from localities further west and south. The genitalia are very similar. Further collections may resolve the species status of *A. mexicana*.

Three specimens are at Genève: a female labeled "Angang"; "TYPUS" [red];

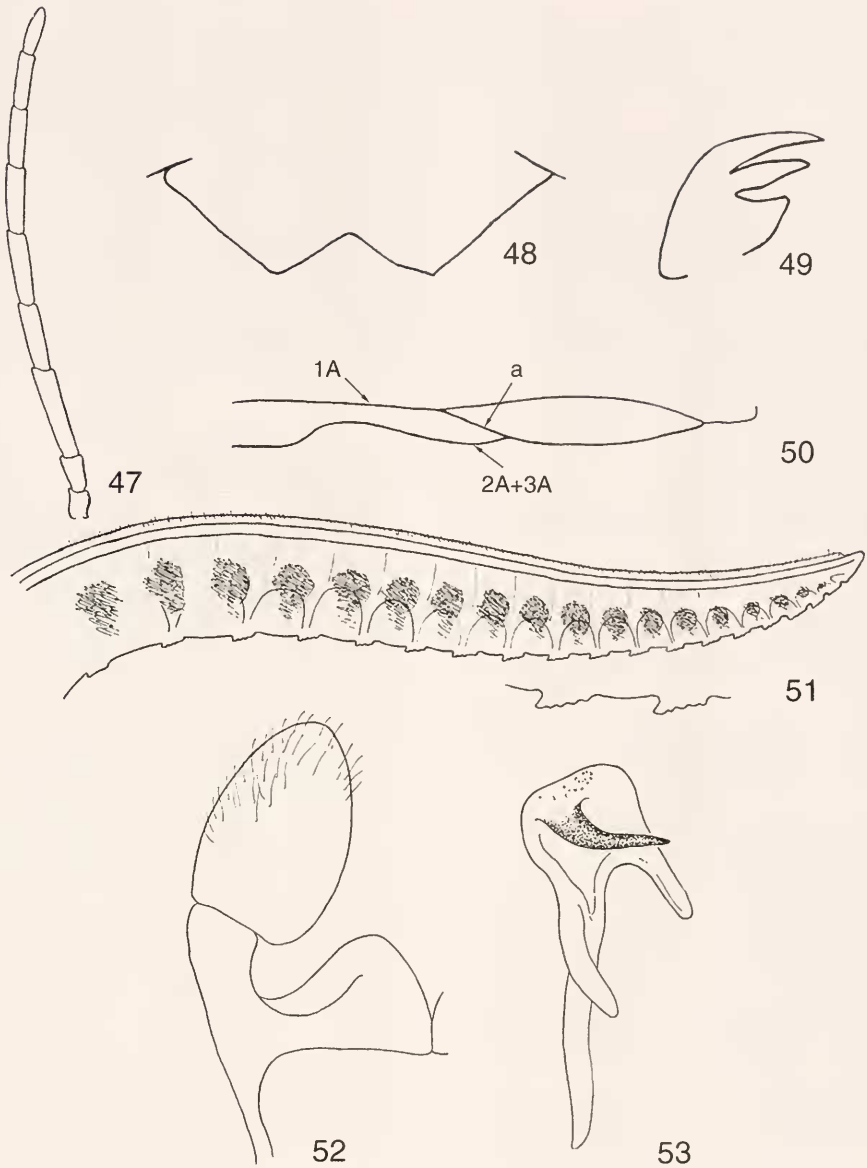
"*Emphytus mexicanus* Cameron (Type)" [handwritten]; "Cameron exam."; a male labeled "Angang"; "S. nigredo var."; "*Emphytus mexicanus* Cam." [handwritten]; "Cameron exam."; and a male labeled "Strongyl. nigredo Norton" [handwritten]; "Angang." The specimen with the red "TYPUS" label is here designated lectotype to fix the identity of this species; this is the specimen stated by Smith (1979b) to be the holotype. The male labeled "Cameron exam" is a paralectotype. I am not certain Cameron examined the other male. The species was apparently confused with *Stombocericidea nigredo* (Norton) (Selandriinae).

*Material examined.*—GUATEMALA: Depto. Quiché, 14° 58.30'N, 91° 06.62'W, 5 km N. Chichicastenango, along Rio Xal-baqiej O Sepela, 1850 m, 20 May 1997, M. A. Metz, Schlinger Foundation Guatemala Expedition May 1997 (1 ♀; Eberswalde). MEXICO: I have seen specimens from Durango, Hidalgo, Jalisco, México, Michoacán, Puebla, Morelos, and Querétaro. See Smith (1979b, fig. 13) for specific localities. Few labels indicate elevation, but several specimens were taken at 8,500' which indicates this is a high elevation species. Collection dates are in April, May, July, August, and September, indicating several generations a year similar to Nearctic species of *Ametastegia*.

### Genus *ANTHOLCUS* Konow

*Antholcus* Konow 1904: 3–4. Type species: *Tenthredo varinervius* Spinola. By monotypy.

*Description.*—Antenna slender, with 1st and 2nd segments each longer than broad; 3rd segment slightly longer than 4th segment; segments beyond 3rd gradually decreasing in length (Fig. 47); apical segments without ventral membranous areas. Clypeus with shallow V-shaped central emargination, not exceeding a third medial length of clypeus (Fig. 48); each mandible bidentate; malar space less than half diameter of front ocellus; genal carina ab-



Figs. 47–53. *Antholcus varinervius*. 47, Antenna. 48, Clypeus. 49, Tarsal claw. 50, Anal area of forewing. 51, Female lancet. 52, Male harpe and parapenis. 53, Male penis valve.

sent; eyes slightly converging below, lower interocular distance greater than eye length; postocellar area as long as broad. Tarsal claw bifid, inner tooth subequal in length to outer tooth, with acute basal lobe almost appearing as a 3rd tooth (Fig. 49); hind basitarsus slightly shorter than following segments combined; pulvilli on hind tarsal segments 1–4. Forewing with

anal crossvein (a) oblique (Fig. 50); vein 2A+3A sometimes partially atrophied basal to junction of crossvein (variable in the single species). Hind wing with cell M present, cell Rs absent; anal cell petiolate, length of petiole subequal to greatest width of cell; apex of radial cell close to apical margin of wing; male with peripheral vein.



*Remarks.*—The shallowly emarginated clypeus, lack of a genal carina, bifid tarsal claws with a basal lobe, and bidentate mandibles will separate *Antholcus* from other Allantinae. The distinct oblique anal crossvein places *Antholcus* in the Allantinae, but it is most likely confused with *Trichotaxonus* of the Blennocampinae because of similar coloration. *Trichotaxonus* has the apex of the abdomen black, has long flexuous hairs on the head and thorax, and the anal crossvein of the forewing is absent or represented by a very short perpendicular vein. Smith (1973b) distinguished the two genera.

A single species occurs in central Chile and adjacent Argentina.

### Species

**varinervius** (Spinola). Argentina (Chubut, Neuquén, Río Negro); Chile (Arauco, Cautín, Colchaqua, Concepción, Coquimbo, Curicó, Llanquihue, Linares, Malleco, Maule, Osorno, Santiago, Talca, Valdivia, Valparaíso).

*Tenthredo varinervius* Spinola 1851: 558–560. ♂. No locality. (Torino).

*Mesoneura* (♂) *varinervia*: Kirby 1882: 157, 397.

*Antholcus varinervius*: Konow 1904: 3 (*varinervis*).—Konow 1905: 100 (*varinervis*).—Enderlein 1920: 370 (*varinervis*).—Smith 1973b: 402–403, 407, Figs. 2, 5, 6, 8, 14 (separation from other genera of Tenthredinidae in Chile; type).—Smith 1979b: 10.—Smith and Pérez 1995: 105.

*Zarca chilensis*: Brèthes 1919: 51–52 (wing, fig. 12; ♀ only, ♂ is *Trichotaxonus coquimbensis* (Spinola) [Blennocampinae]).

*Host plants.*—A label on one specimen reads "*Crinodendron patagua*." [*Crinodendron patagua* Molina; Tiliaceae]; another specimen was swept from *Baccharis* sp. (Asteraceae). Neither may be the true food plant. For references to "*Antholcus varinervis*" as a feeder on *Acaena* spp. (Rosaceae) and importation into New Zealand, see *Ucona acaenae* Smith (Blennocampinae) (Smith 1973b).

*Female, male.*—Length, female, 7.7–8.5

mm; male, 6.8–7.8 mm. Antenna and head black. Thorax black. Legs black with tibiae and tarsi orange. Abdomen orange. Wings moderately, uniformly infuscated; veins and stigma black. Female lancet in Fig. 51; male genitalia in Figs. 52, 53.

*Remarks.*—This species may be confused with *Trichotaxonus coquimbensis* (Spinola) (Tenthredinidae: Blennocampinae) because both are about the same size and color and have similar distributions. Other than differences in the subfamilies, *A. varinervius* has the head and thorax covered with short, straight hairs, shorter than the first antennal segment, and *T. coquimbensis* has the head and thorax covered with long, flexuous hairs, longer than the first antennal segment and about as long as the first two antennal segments.

I could not locate Spinola's type. The interpretation is based on Spinola's description and the interpretation by Smith (1973b).

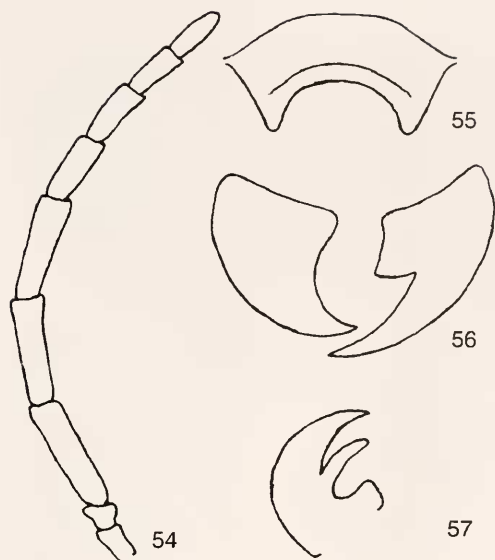
*Material examined.*—ARGENTINA: Largo Puelo, Chubut; Pucare, Neuquén; Llao Llao, Río Negro; Bariloche, Río Negro; El Bolson, Río Negro; Correntoso, Río Negro; Córdoba, Fundo Malcao (province). CHILE: Many specimens from Coquimbo in the north, south to Llanquihue. I have seen specimens from the provinces of Arauco, Cautín, Colchaqua, Concepción, Coquimbo, Curicó, Llanquihue, Linares, Malleco, Maule, Osorno, Santiago, Talca, Valdivia, and Valparaíso. All specimens were collected from October to November.

### Tribe ALLANTINI

#### Genus **MACREMPHYTUS** MacGillivray

*Macremphytus* MacGillivray 1908: 368. Type species: *Harpiphorus varianus* Norton. Orig. desig.

*Description.*—Antenna long, flagellum laterally compressed, each segment slightly expanded at its apex; 2nd segment as broad or broader than long; 3rd segment subequal to or slightly longer than 4th segment; segments beyond 4th gradually



Figs. 54–57. *Macremphytus testaceus*. 54, Antenna. 55, Clypeus. 56, Mandibles. 57, Tarsal claw.

decreasing in length (Fig. 54); without ventral membranous areas on apical segments. Clypeus circularly emarginate, emargination half or more its median length, with transverse ridge on anterior margin (Fig. 55); malar space equal to or greater than diameter of front ocellus; genal carina present to top of eye; left mandible with large subapical tooth, right mandible simple (Fig. 56). Meseipisternum rough to punctate. Tarsal claw with long inner tooth, nearly as long as outer tooth, and with acute basal lobe (Fig. 57); hind basitarsus longer than remaining tarsal segments combined; pulvilli on tarsal segments 1–4. Forewing with anal crossvein oblique, 1st cubital crossvein (Rs) absent, thus with three cubital cells. Hindwing with cell M present, cell Rs absent; anal cell petiolate, petiole short; male without peripheral vein in hind wing.

**Remarks.**—This is an exclusively Nearctic genus. Smith (1979b) included four species, and Koch (1988) added another from Texas and Mexico. Larvae of the eastern North American species feed on *Cornus* spp. (Cornaceae).

One specimen of *Macremphytus testaceus*

(Norton), a species found in eastern Canada and United States, is labeled “Santiago de Cuba.” The specimen is probably mislabeled.

### Species

**albitegularis** Koch. Mexico; U.S.A. (Texas)

\**Macremphytus albitegularis* Koch 1988: 200–201, figs. 1–3. ♀. “Dallas, Texas” (Berlin, ♀).

**Remarks.**—I have examined the holotype and paratype. The holotype is labeled “21308,” “Dallas, Texas, Boll.” [green], “Holotype” [red], and the paratype “14178.” “Mexico, Koppe S.” [green], “Paratype” [red], both with name labels. The holotype has the basal half of the hind femur white and the basal two-thirds of the hind tibia white, whereas the paratype has almost the entire hind femur black and only the basal third of the hind tibia white. However, eastern North American species show similar color ranges.

The almost entirely black color of *M. albitegularis* is similar to that of *M. tarsatus* (Say) of eastern North America, including Texas, but it is separated from *M. tarsatus* by the flat serrulae of the lancet (Koch 1988, figs. 2, 3) versus the deeper and more rounded serrulae of *M. tarsatus* (Smith 1979b, fig. 244). The flat serrulae resemble those of *M. testaceus* (Norton) as illustrated by Smith (1979b, fig. 245). *Macremphytus albitegularis* may be a synonym of *M. tarsatus*, but I prefer to list it separately until taxonomic problems in the genus are resolved.

### Genus *PROBLETA* Konow

*Probleta* Konow 1908a: 86; 1908b: 161. Type species: *Probleta collaratus* Konow. By monotypy.

*Probleta* subg. *Epiprobleta* Malaise 1949: 24. Type species: *Epiprobleta bicoloratus* Malaise. Orig. desig. Described as a subgenus of *Probleta*, but “*Epiprobleta bicoloratus*” given as type species.

*Protoprobleta* Malaise 1949: 24, 30. Type species: *Protoprobleta fulvoviger* Malaise. Orig. desig. **New synonymy.**

*Description*.—Antenna slender, filiform, 1st and 2nd segments longer than broad; 3rd segment longer than 4th segment; apical 4 segments reduced in length, together slightly longer than 3rd segment (Fig. 59); apical 4 segments with ventral membranous areas. Clypeus deeply, circularly emarginate, emargination half or more medial length of clypeus, commonly almost to base of clypeus (Figs. 66, 68, 70, 72, 74, 76–78); labrum truncate and depressed, as broad as or broader than long, its base usually not covered by clypeus (see Figs. of clypeus); mandibles asymmetrical, left mandible with two large subbasal teeth, right mandible with two small subbasal teeth; genal carina absent; malar space linear. Tarsal claw with long inner tooth, slightly shorter than outer tooth and lateral to and appressed to outer tooth, the teeth not on a linear plane with the basal lobe; with acute basal lobe sometimes appearing as a third tooth (Fig. 60), or in three species claws trifid without basal lobe (Fig. 61); hind basitarsis subequal to or longer than length of following tarsal segments combined; pulvilli present only on tarsal segments 3 and 4. Forewing (Fig. 58) with anal crossvein (a) oblique; first cubital crossvein (Rs) present, thus with four cubital cells. Hind wing (Fig. 58) with anal cell sessile; cell M usually present (absent in one species) and cell Rs absent; male with peripheral vein.

*Remarks*.—The deeply cleft clypeus and broad truncate labrum will separate *Probleta* from other genera of Allantinae. The subgenus *Epiprobleta* was described for one species, *E. bicoloratus*, which lacks cell M in the hind wing. Other than this, there is no basis for its recognition. Malaise (1963) retained it as a subgenus though he questioned the absence of M as a constant character. *Protoprobleta* was established by Malaise because of the slightly longer labrum, about as broad as long, the base of the labrum covered by the clypeus, the clypeal emargination only about half the medial length of the clypeus, shorter teeth

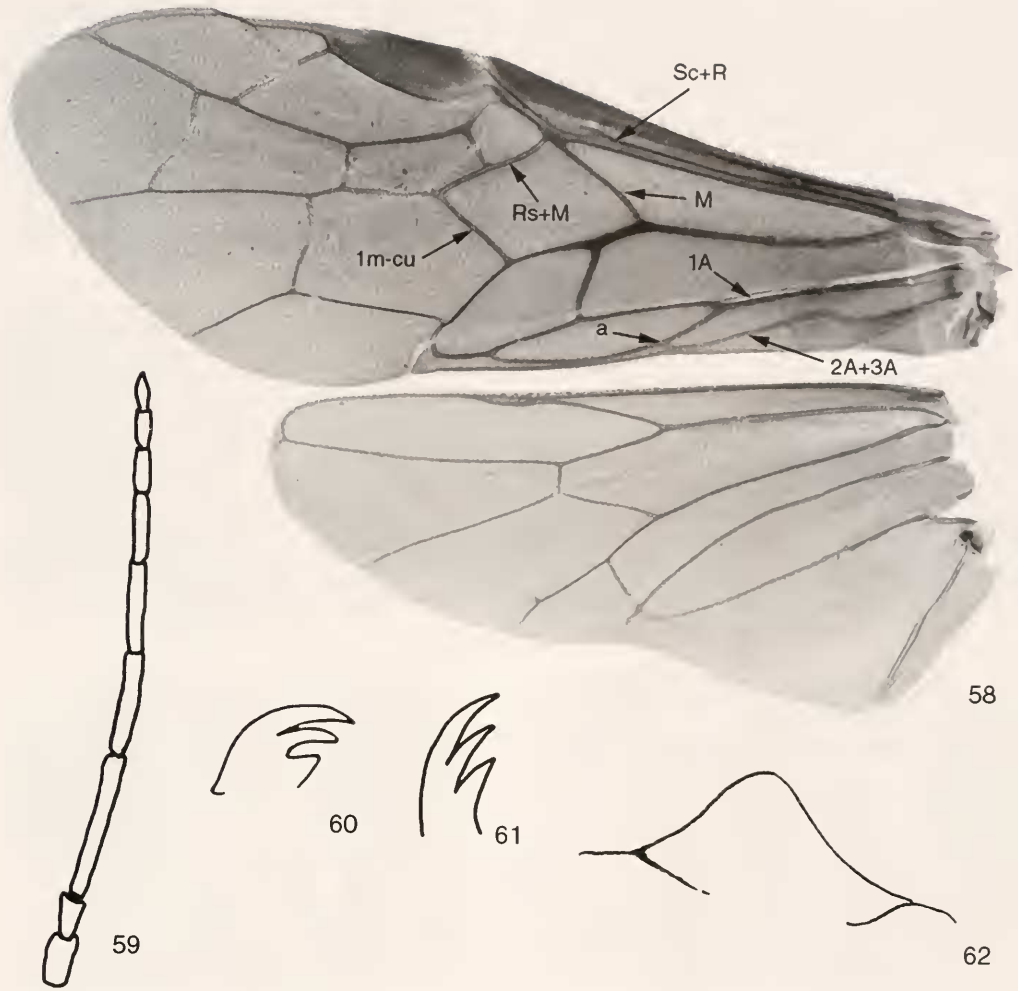
of the left mandible, and more rounded basal lobe of the tarsal claw. He included two species, *P. fulvoniger* and *P. niger*. I do not believe these characters are sufficient to recognize it as a separate genus since there is variation in other species in the depth of the clypeal emargination, length of the labrum, and length of the teeth of the left mandible.

Konow (1908a, b) described several species of *Probleta*, and Rohwer (1911) designated *P. langei* Konow as type species. *Probleta*, however, was established with a single species, *collariatus*, on page 86 (1908a), and the description as a new genus with three new species, including *P. langei*, appeared two months later in the same journal (1908b). Thus, the genus is monotypic and the designation by Rohwer (1911) is incorrect.

Enderlein (1920) gave the type species of "*Netrocerus*" (emendation or error for *Netroceros* Konow, 1896, an African genus) as the Brazilian species *N. bilanx* Konow. This is an error because Rohwer (1911) had already designated the type species of *Netroceros* Konow as *Eriocampa* (*Netroceros*) *rufiventris* Konow from Africa.

*Probleta* is a rather large Neotropical genus that occurs from Mexico south to Peru and Brazil. Forsius (1925) and Malaise (1949) gave keys to species. A number of species are known only from one or several specimens, and more material is needed to determine extent of color variation and its stability for species distinction. For the material at hand, however, color appears relatively stable. I include 24 species in this genus, mostly from Brazil, Bolivia, Peru, and Paraguay. One species, *P. columbiana*, occurs as far north as southern Mexico, and another, *P. decorata*, in Costa Rica.

Other than color, characters for species include the antenna, head shape from above, clypeus, labrum, tarsal claws, female lancets, and male genitalia. The antennae of all species are of similar shape (Fig. 59) but the relative lengths of the



Figs. 58–62. *Probleta*. 58, Forewing and hind wing of *P. bicolor*. 59, Antenna of *P. bilanx*. 60, Tarsal claw of *P. bicolor*. 61, Tarsal claw of *P. nigropunctata*. 62, Side view of mesoscutellum of *P. decorata*.

third and last four segments differ. The head from above may be narrow and rounded or broad behind the eyes, and the shape of the postocellar area differs. The clypeus has varying degrees in the depth of the emargination and the shape of the lateral lobes may differ. The labrum is of different shapes, and sometimes the base is exposed due to the depth of the clypeal emargination. Most species have the tarsal claws bifid with a basal lobe, but in three species, *P. nigropunctata*, *P. nicklei*, and *P. siceva*, the basal lobe is modified into an

acute tooth, thus the claws are trifid, without a basal lobe. Differences in the female lancet (Figs. 79–90) appear to be good for species diagnosis. The shape of the male genital capsule and penis valve differ for those species examined. The penis valve of all species has some type of lateral spine.

Concerning the gender of the genus, Konow (1908a) stated “masculini generis,” but *Probleta* must be feminine of the Greek word *probletos*, and it is therefore treated as feminine here.



KEY TO SPECIES OF *PROBLETA*

- 1 Wings yellow, sometimes with apices beyond stigma infuscated; basal half or more of stigma yellow to orange ..... 2
  - Wings clear or infuscated, not yellowish or bicolored; stigma dark brown to black ..... 8
- 2 Mesoscutellum raised into a high conical projection (Fig. 62); thorax with mesonotum, mesopleuron, and mesosternum black (lancet similar to Fig. 82; male genitalia in Figs. 95, 96) ..... *decorata*, new species
  - Mesoscutellum low, rounded to flat; thorax entirely orange yellow or orange yellow with mesoprescutum and mesosternum black ..... 3
- 3 Legs orange, only apical 2 or 3 tarsal segments black (head and mouthparts black, wings distinctly infuscated apical to stigma; lancet in Fig. 79) ..... *bilanx* (Konow)
  - Hind tarsus entirely black and apex of hind tibia may be black ..... 4
- 4 Apex of hind tibia black ..... 5
  - Hind tibia entirely yellow to orange ..... 6
- 5 Clypeus, labrum, and palpi white; postocellar area slightly longer than broad; head from above broad behind eyes (Fig. 73) lancet in Fig. 80, serrulae flat .....
  - ..... *grossoensis*, new species
  - Mouthparts black as rest of head; postocellar area broader than long; head from above narrowing behind eyes (Fig. 71); lancet in Fig. 81, serrulae rounded .....
    - ..... *gracilicornis* Konow
- 6 First two antennal segments, antennal crests, supraclypeal area, and mouthparts pale orange to yellow; hind basitarsus longer than following tarsal segments combined ....
  - ..... *frenata* Konow
  - Antenna and head black, mouthparts brownish or black, labrum may be whitish; hind basitarsus subequal in length to following tarsal segments combined ..... 7
- 7 Wings uniformly yellow, apices not noticeable infuscated; labrum brownish; antennal crests low, far apart, separated by distance about equal to breadth of one (Fig. 67); lancet in Fig. 82, long and slender ..... *corana*, new species
  - Wings distinctly infuscated apical to stigma; labrum white; antennal crests high, close together, separated by distance less than breadth of one (similar to Fig. 69); lancet in Fig. 83, short and broad ..... *columbiana* (Enderlein)
- 8 Thorax entirely yellow or orange, without black markings ..... 9
  - Thorax partly or entirely black ..... 17
- 9 Hind wing with cell M absent; abdomen black, with basal sterna whitish (postocellar area longer than broad; basal 1/3 of hind tibia pale orange) ..... *bicolorata* Malaise
  - Hind wing with cell M present; basal 1 or 2 abdominal segments or more entirely pale yellow to orange ..... 10
- 10 Hind tibia orange or with basal 1/3 to 2/3 orange and apically black ..... 11
  - Hind tibia entirely black ..... 14
- 11 Only extreme apex of hind tibia ringed with black or apical 1/3 of hind tibia black on outer surface (lancet in Fig. 84; male genitalia in Figs. 93, 94; abdominal segments 5 to apex black) ..... *wygodzinskyi* Malaise
  - Apical 1/4 or more of hind tibia black ..... 12
- 12 Clypeal emargination shallow, about half medial length and labrum as long as broad, its base covered by clypeus (similar to Fig. 77); apical 2/3 of hind tibia black .....
  - ..... *fulvoniger* (Malaise)
  - Clypeal emargination nearly to base of clypeus and labrum broader than long, its base



63



65



64



66



67



69



68



70

Figs. 63–70. *Probleta* spp., views of head and clypeus and labrum. 63, *P. collariata*, dorsal. 64, *P. nigropunctata*, dorsal. 65, *P. bicolor*, dorsal. 66, *P. bicolor*, clypeus and labrum. 67, *P. corana*, dorsal. 68, *P. corana*, clypeus and labrum. 69, *P. decorata*, dorsal. 70, *P. decorata*, clypeus and labrum.

- exposed, not covered by clypeus (similar to Figs. 70, 72); apical  $\frac{1}{3}$  of hind tibia black  
..... 13
- 13 Small, about 7 mm long; head from above narrowing behind eyes, as in Fig. 63; Bolivia,  
Peru ..... *disiunctiva* (Konow) (in part)  
– Larger, about 10 mm long; head from above broad behind eyes, as in Fig. 67; Brazil (Rio  
de Janeiro) (lancet in Fig. 85, with serrulae deep, rounded) ..... *shannoni*, new species
- 14 Clypeal emargination shallow, about half medial length of clypeus and labrum as long as  
broad, its base covered by clypeus (similar to Figs. 77, 78); tarsal claws with 3 teeth,  
without basal lobe (Fig. 61) ..... 15  
– Clypeal emargination nearly to base of clypeus and labrum broader than long, its base  
exposed, not covered by clypeus (similar to Figs. 70, 72); tarsal claws with 2 teeth and  
basal lobe (Fig. 60) ..... 16
- 15 Head from above strongly narrowing behind eyes, similar to Fig. 63 (male genitalia in  
Figs. 103, 104); female unknown ..... *nicklei*, new species  
– Head from above broad behind eyes, similar to Fig. 64 (lancet in Fig. 90); male unknown  
..... *siceva*, new species
- 16 Terga black with basal plates and small spot on 2nd tergum pale orange; antenna slender,  
6th segment 3× longer than broad ..... *usta* Forsius  
– Basal segments of abdomen orange, segments 4, 5, or 6 to apex black; antenna stout, 6th  
segment about 2× longer than broad (lancet in Fig. 86; male genitalia in Figs. 99, 100)  
(head in Fig. 65; clypeus and labrum in Fig. 66) ..... *bicolor* (Kirby)
- 17 Clypeal emargination shallow, about half its medial length and labrum as long as broad,  
its base covered by clypeus (Fig. 77); thorax orange with mesoscutellum and metas-  
cutellum black ..... *mazona*, new species  
– Clypeal emargination nearly to base of clypeus and labrum broader than long, its base  
exposed, not covered by clypeus (similar to Fig. 76); thorax with different combination  
of color ..... 18
- 18 Thorax yellow orange, with only triangular spot on mesoprescutum and sometimes paired  
spots on mesosternum black (mid- and hind tibiae and tarsi black) ..... 19  
– Thorax with more black, usually part of mesepisternum or most of mesonotum or lobes  
of mesonotum black; mesosternum and lower  $\frac{1}{2}$ – $\frac{2}{3}$  mesopleuron black in *albiventris* ..... 20
- 19 Mesosternum pale orange; head from above narrow behind eyes (similar to Fig. 63); tarsal  
claws with 2 teeth and basal lobe (Fig. 60) (male genitalia in Figs. 107, 108) .....  
..... *disiunctiva* (Konow) (in part)  
– Paired black spots on mesosternum; head from above broad behind eyes (Fig. 64); tarsal  
claws with 3 teeth (Fig. 61) (lancet in Fig. 87; male genitalia in Figs. 97, 98) .....  
..... *nigropunctata* Malaise
- 20 Thorax and abdomen black; clypeal emargination about half medial length of clypeus and  
labrum about as broad as long, its base covered by clypeus, similar to Fig. 77 (legs  
with femora, fore- and midtibiae, and basal  $\frac{1}{3}$  hind tibia orange) ..... *niger* (Malaise)  
– Thorax and/or abdomen partly yellow or orange; clypeal emargination nearly to base of  
clypeus and labrum broader than long, its base not covered by clypeus, similar to Fig.  
70 ..... 21
- 21 Seven basal abdominal segments and basal half of hind tibia pale orange; mesopleuron  
with paired black spots (mesonotum black in male, but anterolateral corners of meso-  
prescutum pale orange in female) ..... *langei* Konow  
– Abdominal dorsum black or at least some black marking on lateral areas of 7 basal ab-  
dominal terga, and hind tibia either entirely black or basal third or half or more white



to pale orange; mesopleuron black with usually only upper corner of mesopleuron pale orange .....	22
22 Hind tibia and tarsus entirely black .....	23
– Hind tibia with basal third or half pale orange and apical half or 2/3 black, or only extreme apex black .....	24
23 Abdominal terga entirely black; mesonotum black or black with posttergite and small spots on anterolateral corners of prescutum and laterally on lateral lobes yellow orange; antennal crests low and far apart, separated by distance equal to breadth of one (Fig. 63); lancet in Fig. 88, with serrulae shallow; male genitalia in Figs. 105, 106 (abdomen black with venter and sometimes margin white to yellow; apical margins of segments white) .....	<i>collariata</i> Konow
– Basal 5 abdominal terga with lateral black spots; V-shaped mark on mesoprescutum, lateral edges of lateral lobes, posttergite and scutellum pale in male only; antennal crests high and close together, separated by distance of less than breadth of one (Fig. 64); lancet in Fig. 89, with serrulae deeper; male genitalia in Figs. 91, 92 .....	<i>malaisei</i> , new species
24 Femora blackish, paler toward tibiae; tarsi blackish with indistinct pale orange ring on basal 1/3 of basitarsi; mesonotum orange; abdomen black above, venter white except for apical sternite and sheath .....	<i>albiventris</i> Malaise
– Femora pale orange; hind tarsus black except at base of basitarsus, only 3rd and 4th fore- and midtarsal segments blackish; mesonotum black with only V-mark on prescutum, posttergite, and metapleuron pale orange; abdomen black, basal 2 or 3 sterna paler to dark orange .....	<i>sahlbergi</i> Malaise

Species

**albiventris** Malaise. Brazil (Bahia, Minas Gerais).

\**Probleta albiventris* Malaise 1949: 30, fig. 7D. ♀. "Brazil (Bahia)" (Stockholm, ♀).—Smith 1979b: 11.

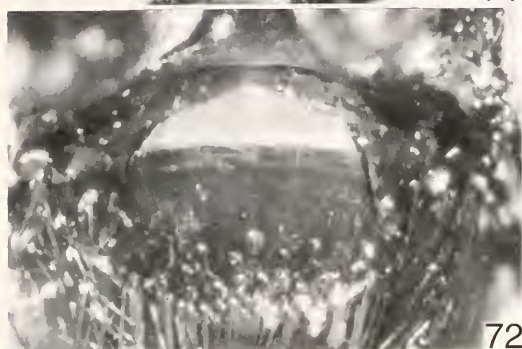
*Female*.—Antenna, head, and mouth-parts black. Thorax orange; metanotum around cenchri blackish; mesosternum to lower half to two-thirds of mesepisternum black, upper third to half of mesepisternum and entire mesonotum orange except downturned lateral areas of lateral lobes blackish. Legs with coxae dark orange to blackish at bases; trochanters whitish; femora blackish, whitish at extreme apices; tibiae whitish, apical tip of hind tibia black; tarsi black with basal third or so of basitarsi orange. Abdomen black above, white below, white on venter extends to lateral areas of terga, from above appearing as a lateral white line; white on sterna extends to base of sheath. Wings very

lightly uniformly infuscated; veins and stigma black. Antennal length about 1.5× head width; 6th segment 2.0× longer than broad. Clypeus with deep circular emargination for nearly 3/4 medial length of clypeus, labrum 2.0× broader than long, with base exposed. Eyes small, lower interocular distance slightly longer than eye length; head from above broad behind eyes; antennal crests large, distance between them less than width of one (similar to Fig. 64). Hind basitarsus subequal in length to remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M.

*Remarks*.—Characteristic color features are the black dorsal and white ventral color pattern of the abdomen and the orange thorax with the black mesosternum and lower two-thirds of the mesepisternum.

Malaise described this species from "1 ♀." The holotype is labeled "Museum Paris, Brésil, Bahia, (ex. coll. A. David) R.





Figs. 71-78. *Probleta* spp., views of head and clypeus and labrum. 71, *P. gracilicornis*, dorsal. 72, *P. gracilicornis*, clypeus and labrum. 73, *P. grossensis*, dorsal. 74, *P. grossensis*, clypeus and labrum. 75, *P. malaisei*, dorsl. 76, *P. malaisei*, clypeus and labrum. 77, *P. mazona*, clypeus and labrum. 78, *P. nicklei*, clypeus and labrum.

Oberthur 1903"; "TYPUS" [red]; "Probleta albiventris type n. sp. Malaise det. 1947."

*Material examined*.—BRAZIL: Bahia (holotype); Araguari, MG, 1-X-1931, R. Spitz leg. (1 ♀; at Museu de Ciencias Naturais, Porto Alegre, RS, Brazil).

**bicolor** (Kirby). Brazil (Rio de Janeiro, Santa Catarina)

\**Siobla bicolor* Kirby 1889: 142. ♀. "Theresopolis, Brazil" (London, ♀).—Dalla Torre 1894: 63.

*Encarsioneura bicolor*: Konow 1905: 119.

*Probleta bicolor*: Malaise 1949: 26–27.—Smith 1979b: 11.

*Female, male*.—Length, 7.8–8.2 mm. Antenna and head black. Thorax orange. Legs orange with segments 3 and 4 of fore- and midtarsi and hind tibia and hind tarsus black. Abdomen orange with segments 5 or 6 to apex and sheath black in female, abdominal dorsum blackish or blackish from tergum 3 to apex in male. Wings uniformly infusate; veins and stigma black. Antennal length  $1.5\times$  head width; apical 4 antennal segments together  $1.2\times$  length of 3rd segment; 6th to 8th segments each about  $2.0\times$  longer than broad. Anterior margin of clypeus deeply circularly emarginated for about  $\frac{3}{4}$  of its medial length, lateral lobes narrow and far apart (Fig. 66); anterior margin of labrum truncate, labrum about  $3.0\times$  broader than long, with base exposed (Fig. 66). Head from above narrowing behind eyes (Fig. 65); lower interocular distance subequal to eye length; postocellar area about as long as broad; antennal crests low and far apart, separated by distance greater than breadth of one (Fig. 65). Hind basitarsus subequal in length to length of remaining tarsal segments combined. Tarsal claws with basal lobe. Hindwing with cell M. Female lancet in Fig. 86, with serrulae very deep on about apical third, shallower on basal two-thirds; male genitalia as in Figs. 99, 100.

*Remarks*.—The holotype female is BM type #1.242, labeled "*Siobla bicolor* type," "Theresopolis 88-137."

*Material examined*.—BRAZIL: Theresopolis (holotype); Nova Teutonia, Santa Catarina: III-1948 (1 ♂); II-19-1956 (1 ♀); 25 Dec. [♂] 1962 (1 ♂); X-17-1964 (2 ♂); Feb. 1965 (2 ♂); Feb. 1966 (1 ♀, 1 ♂); X-1966 (1 ♀); XI-68 (1 ♂); III-1970 (2 ♀); May 7, 1977 (1 ♀); no date (1 ♀) (at Washington).

**bicolorata** Malaise. Brazil (São Paulo)

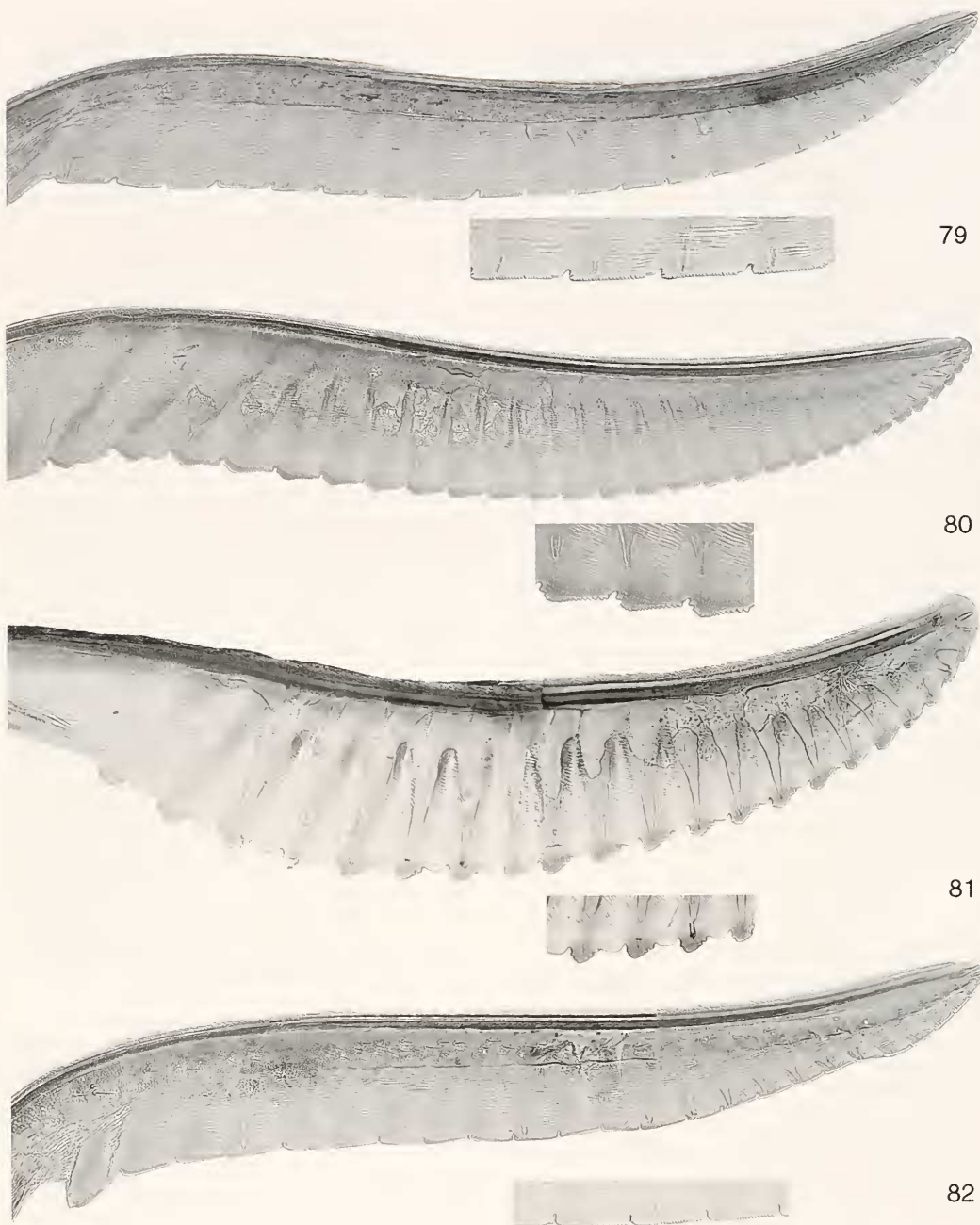
\**Probleta bicolorata* Malaise 1949: 28, fig. 6E, 7B.

♀. "Brazil (Santos)" (Stockholm, ♀).—Smith 1979b: 11.

*Female*.—Antenna, head, and mouthparts black. Thorax orange. Legs orange with tip of midtibia; most of hind tibia except about basal third orange on outer surface and basal half on inner surface, mid- and hind tarsi except extreme base of basitarsi, and apical 3 segments of foretarsus black. Abdomen black with basal sternum whitish, center of basal plates suffused with paler dark orange. Wings lightly, uniformly infuscated; veins and stigma black. Antennal length  $1.5\times$  head width; 6th segment  $2.0\times$  longer than broad. Clypeus deeply, circularly emarginated for about  $\frac{3}{4}$  its medial length; labrum with base exposed. Head from above broad behind eyes; postocellar area longer than broad; lower interocular distance about  $1.2\times$  eye length. Basal lobe of tarsal claw small, rounded. Hind basitarsus slightly longer than length of remaining tarsal segments combined. Hind wing without cell M.

*Remarks*.—This is the only known species of *Probleta* that lacks cell M in the hind wing though this may not be a constant character, as Malaise (1963) stated. Another characteristic is the basal lobe of the tarsal claw, which is smaller and not as acute as in most other species of *Probleta*.

Malaise described this species from "1 ♀." The holotype is labeled "Ilha Santo Amaro, nr. Santos, Brazil, G.E. Bryant, 27-IV-1912"; "coll. Malaise"; "TYPUS" [red]; folded label "*Probleta bicolor* Kby, Malaise dt. 1933" and on reverse "Type has:



Figs. 79–82. *Probleta*, female lancets. 79, *P. bilanx*. 80, *P. grossensis*. 81, *P. gracilicornis*. 82, *P. corana*.

one closed middle cell, postocellar area trifle wider than 1, latr. fur. interrupt. middle"; "*Epiprobleta* n. gen. *bicolorata* n. sp. Malaise det 1947." I have not seen other specimens.

**bilanx** (Konow). Bolivia ?; Brazil (Paraná, Rio Grande do Sul, Santa Catarina); Paraguay.

\**Eriocampa bilanx* Konow 1896: 51. ♀. "Brazil (Rio Grande do Sul)" (Eberswalde, ♀).—Ko-



now 1901: 66 (Bolivia).—Oehlke and Wudowenz 1984: 369 (holotype).

*Netroceros bilanx*: Konow 1905: 101.

*Probleta bilanx*: Konow 1908b: 161.—Forsius 1925: 27.—Malaise 1949: 26.—Smith 1979b: 11.

*Female*.—Length, 8.0–10.0 mm. Antenna, head, and mouthparts black. Thorax orange. Legs orange with apical 2 segments of foretarsus and apical 3 segments of mid- and hind tarsus black. Abdomen orange with apical 3 segments and sheath black. Forewing yellow with apex beyond apex of stigma black; veins and stigma yellow in yellow area, black in black apex; hind wing yellowish with apex slightly darker to blackish. Antennal length about  $1.6\times$  head width; apical 4 segments  $1.4\times$  length of 3rd segment; 6th segment  $2.0\times$  longer than broad. Clypeus deeply emarginated for about  $\frac{3}{4}$  of its medial length; lobes narrow, rounded at apices; labrum about  $2.2\times$  broader than long, exposed at base, anterior margin truncate. Head from above somewhat narrowing behind eyes (similar to Fig. 64); postocellar area subquadrate, about as long as broad; lower interocular distance subequal to eye length; antennal crests low, rounded, distance between them about equal to width of one. Hind basitarsus subequal in length to length of remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Female lancet in Fig. 79, with serrulae flat.

*Remarks*.—The coloration is close to *P. columbiana* which also has flat serrulae on the lancet, but those of *P. bilanx* are more distinct from each other.

Konow did not state how many specimens he had. The lectotype, here designated to fix the identity of the species, is the female at Eberswalde labeled "Rio-Grande do Sul, Brasil," "Coll. Konow," "Holotypus" (red), "*Probleta bilanx* Knw., Brasil," "Typus" (red).

The record from Bolivia is from Konow (1901).

*Material examined*.—BRAZIL: Rio Grande

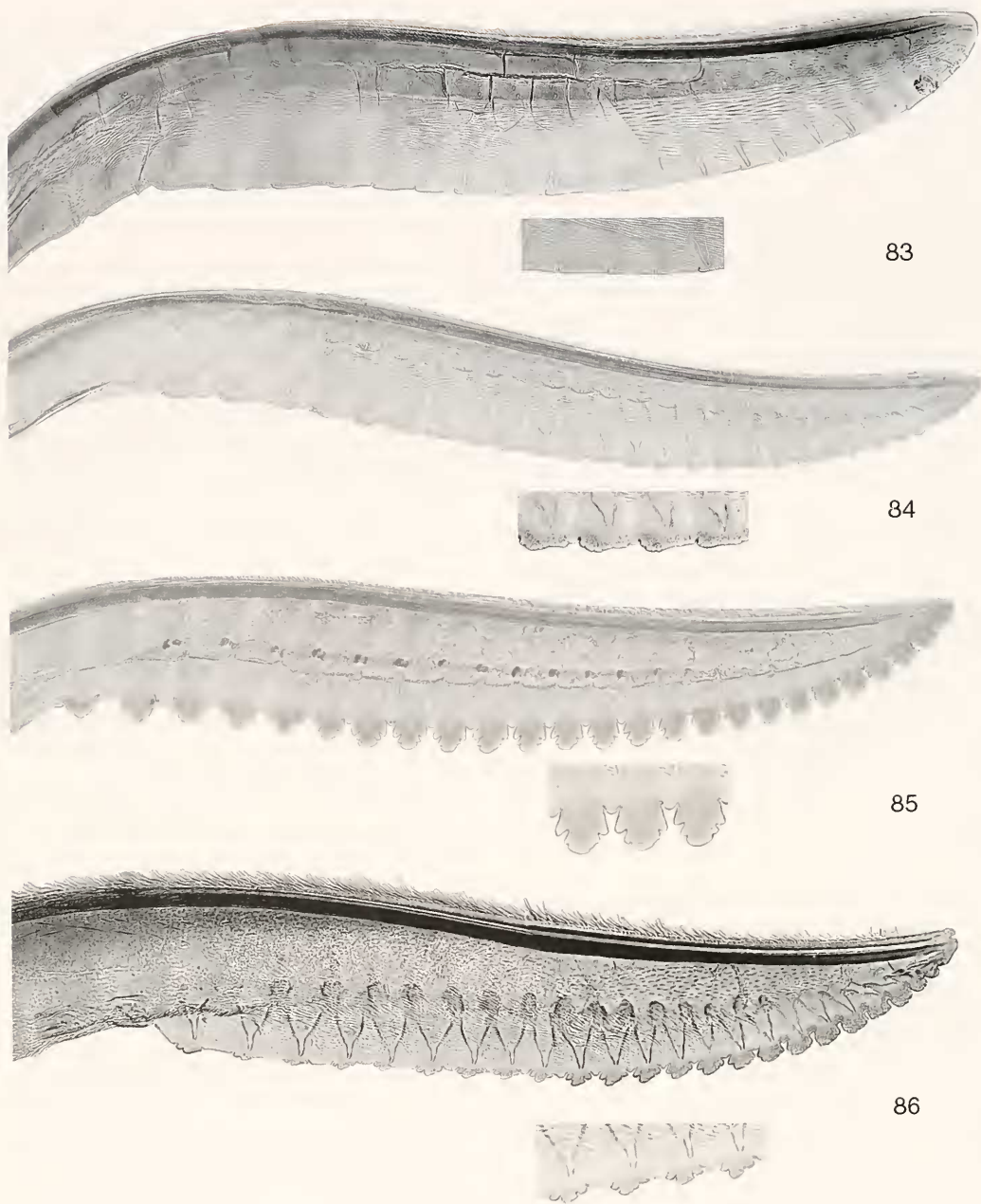
do Sul (lectotype); Campina Grande nr. Curitiba, Brazil, II-19-66 (1 ♀, Townes Coll.). PARAGUAY: Dpto. Paraguari: Parque Nacional Xbycuí, X.3.1984, R.T. Bonace (1 ♀, Asuncion).

*collariata* Konow. Brazil (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

\**Probleta collariatus* Konow 1908a: 86–87. ♂ (♀ misidentified). "Brasilia (Rio de Janeiro)" (Bruxelles, ♂).—Forsius 1925: 27.—Malaise 1949: 30, fig. 7F (Rio de Janeiro, Minas Gerais, and Espírito Santo).—Oehlke and Wudowenz 1984: 374 (♀ syntype at Eberswalde).—Smith 1979b: 11.

*Female, male*.—Length, 7.3–8.3 mm. Antenna and head black. Thorax mostly black, with pronotum, tegula, parapteron, upper and anterior margins of mesepisternum, central stripe on mesosternum, metapleuron, upper mesepimeron, anterolateral corners of mesoprescutum, scutellar appendage, and faint lateral margin of mesonotal lateral lobes yellow orange; scutellar appendage may be brownish. Legs yellow orange; hind tibia and hind tarsus black; apex of basitarsi and apical 3 or 4 segments of fore- and midtarsi blackish. Abdomen black with ventral 4–5 sterna yellow orange; terga 2 to 4 or 5 sometimes with small central dark orange spots; posterior margin of segments narrowly white. Wings uniformly hyaline to lightly infuscated; veins and stigma black. Antenna  $1.8\times$  head width; apical 4 antennal segments  $1.3\times$  longer than 3rd segment; 6th segment almost  $3.0\times$  longer than broad. Head from above strongly narrowing behind eyes (Fig. 63); postocellar slightly broader than long; lower interocular distance shorter, about  $0.9\times$ , than eye length; antennal crests low, far apart, separated by distance about equal to breadth of one (Fig. 63). Hind basitarsus subequal in length to remaining tarsal segments combined. Tarsal claw with basal lobe. Hind wing with cell M. Lancet in Fig. 88, with shallow, rounded serrulae; male genitalia in Figs. 105, 106.





Figs. 83–86. *Probleta*, female lancets. 83, *P. columbiana*. 84, *P. wygodzinskyi*. 85, *P. shamoni*. 86, *P. bicolor*.

*Remarks.*—Three specimens labeled as types of *collariatus* by Konow are at Bruxelles. The lectotype, here designated to fix the identity of this species, is a male labeled “Brésil 9-72”; “Coll. Camille Van Volexm”; “*Probleta collariatus* n. sp.,

type, det Konow 1907”; “Type” [red]; “Malaise n. 51”; and my lectotype label. The head is off the specimen and in a paper triangle next to it. Malaise’s (1949) interpretation of *P. collariatus* was based on this specimen, and as first reviser of *Prob-*

*leta*, I follow his interpretation in designating this specimen as lectotype. The other two specimens, a male and a female, probably the female Konow described, are *Probleta sahlbergi* Malaise. The abdomen is off the male and in the same paper triangle as the head of the lectotype of *collariatus*. One female labeled as a syntype is at Eberswalde, labeled "Rio de Janeiro," "Coll. Konow," "Syntypus" (red), "*Probleta collariatus* Knw., Brasil," "Typus" (red); this specimen is a paralectotype.

**Material examined.**—BRAZIL: Teresópolis, III-12-66 (5 ♀, ♂), III-14-66 (3 ♀), II-13-66 (1 ♀, Townes Coll.); Campina Grande, nr. Curitiba, II-21-66 (1), II-14-66 (1 ♀, Townes Coll.); S.J. Barreiro, Serra do Boçaima, 1650 m, XI-68 (2 ♀, Townes Coll.); Rio de Janeiro, Govea, 10-XI-36, Mangabeira (1 ♂, Oswaldo Cruz); Repressa RG, GB, VII-72, F. M. Oliveira (1 ♀, Davis); Nova Friburgo, F. Germain, Février 1884 (1 ♀, Paris); Serra dos Orgãos, Teresopolis, R.J., I-21-26-69, C. Porter, A. García (3 ♀, ♂, Cambridge); Serra da Bocaina, S.J. Barreiros, S.P., I-13-17-69, Porter, Garcia (1 ♀, Cambridge); Est. Biol. Boraceia, Salesópolis, São Paulo, 11-V-1961, K. Lenko (1 ♀, São Paulo); Campos do Jordão, S. Paulo, XI-1857, K. Lenko (1 ♀, Paraná); Rio de Janeiro, Paineiras [spelling?], 30-6-1918, R. Fischer (1 ♀, Eberswalde).

A specimen at Tucumán is labeled "Sta. Cataline Mts., Arizona U.S.A., 8000 ft., VIII-[?], P. Wygodzinsky." It is probably mislabeled.

**columbiana** (Enderlein). Colombia; Ecuador; Mexico (Chiapas); Venezuela

\**Netrocerus columbianus* Enderlein 1920: 371–372. ♀. "Columbien" (Warszawa, ♀).

*Probleta columbianus*: Malaise 1949: 26.—Smith 1979b: 11.

**Female.**—Length 9.5–10.5 mm. Antenna and head black with clypeus and mouthparts brownish, labrum white. Thorax orange. Legs orange, only mid- and hind tarsi black. Abdomen orange with apical 3 or

4 segments and sheath black. Forewing yellow with apical part (apex of stigma to apex of wing) black; hind wing similar; stigma and veins orange, black in apical infuscated part. Antennal length  $1.8\times$  head width; apical 4 segments about  $1.1\times$  length of 3rd segment; 6th segment  $2.0\times$  longer than broad. Lower interocular distance  $1.2\times$  greater than eye length; postocellar area about as long as broad; head from above broad, straight, not narrowing behind eyes; antennal crests high, close together, separated by distance less than breadth of one. Posttergite long, medial part roundly projecting. Hind basitarsus subequal in length to remaining tarsal segment combined. Tarsal claws with basal lobe. Hind wing with cell M. Serrulae of lancet low, indistinguishable from each other (Fig. 83).

**Remarks.**—Enderlein described *N. columbianus* from "1 ♀." The holotype is labeled "Columbia, Pehlke"; "TYPE" [red]; "*Netrocerus columbianus* Enderl. ♀ type. Dr. Enderlein det 1918" [handwritten]. This is the northernmost species of *Probleta*, the northern record being from Chiapas, Mexico.

**Material examined.**—COLOMBIA: Holotype. ECUADOR: Guayas, Prov. Guayaquil, 50 m, 21–22.II.81 (1 ♀, Ottawa). MEXICO: Mexico, Chiapas, 2500', 17 m. N. Juixtla, 3 June 1969 (1 ♀, Ottawa). VENEZUELA: 42 km SE Maturin, Monagas, June 16, 1958 (1 ♀, Los Angeles); Guarico, Hato Masaguaral (44 km S Calabozo), May 11–19, 1985, Menke & Carpenter (1 ♀, Washington).

**corana** Smith, new species. Brazil (Santa Catarina)

*Probleta corana* Smith

**Female.**—Length, 9.0–10.0 mm. Antenna and head black; labrum and palpi brownish; apex of mandible dark reddish. Thorax orange yellow. Legs orange yellow with hind tarsus black and fore and mid-tarsi infuscated toward apices. Abdomen

orange yellow with apical 4 segments and sheath black, and 5th tergum black with central yellow spot. Wings uniformly faintly yellowish without noticeable infuscation toward apices; veins and stigma yellow to orange. Antennal length  $1.7\times$  head width, apical 4 segments  $1.4\times$  length of 3rd segment and equal to segments 4 and 5 combined, 6th segment about  $2.0\times$  longer than broad. Clypeus deeply cleft for about  $\frac{1}{5}$  of its medial length, lateral lobes narrow and far apart, labrum truncate, slightly more than  $2.0\times$  broader than long, its base exposed (Fig. 68). Head from above broad behind eyes (Fig. 67); postocellar about as long as broad; lower interocular distance slightly greater, less than  $1.1\times$ , eye length; antennal crests high and close together, separated by distance about equal to one (Fig. 67). Hind basitarsus subequal in length to following tarsal segments combined. Tarsal claw with basal lobe. Hind wing with cell M. Sheath narrow, rounded at apex in lateral view. Lancet in Fig. 82, with serrulae flat.

*Male*.—Unknown.

*Holotype*.—♀, "Brasilien, Nova Teutonia, 27° 11' B., 52° 23' L., 300–500 m, XI-12-1964, Fritz Plaumann" (Washington).

*Paratypes*.—BRAZIL: Same locality as holotype, X-6-1956 (1 ♀), 18.XI.1938 (1 ♀). (Washington, London).

*Etymology*.—As devised, the specific epithet is an arbitrary combination of letters and is to be treated as a noun.

*Remarks*.—This species is separated from other species with yellow wings by its entirely yellow wings, yellow hind tibia, black hind tarsus, and black antenna and head.

**decorata** Smith, new species. Costa Rica

*Probleta decorata* Smith

*Female*.—Length, 10.0 mm. Antenna and head black; labrum brownish; maxilla and labium, including palpi, yellow orange. Thorax black with tegula and posttergite (especially at center) brownish; cervical

sclerites whitish; pronotum (except brownish spot at center of each side), parapteron, metapleuron, and metanotum lateral to each cenchrus yellow. Legs yellow orange with foretarsal segments 2–4, midtarsal segments 2–4 (5th more brownish), and extreme apex of hind basitarsus and segments 2–5 of hind tarsus black. Abdomen yellow orange with segments 6 to apex and sheath black. Forewing yellow orange with apex from middle of stigma black; basal half of stigma yellow orange, apical half black; veins yellow in yellow part, black in black part; hind wing yellow with blackish apical to stigma; veins yellow in yellow part, black in black part. Antennal length  $2.0\times$  head width, apical 4 segments  $1.3\times$  length of 3rd segment; 6th segment about  $2.0\times$  longer than broad. Clypeus deeply, circularly emarginated for about  $\frac{3}{4}$  of its medial length, lateral lobes narrow and far apart (Fig. 70); labrum with anterior margin subtruncate, nearly  $3.0\times$  broader than long, with base exposed (Fig. 70). Head from above broad behind eyes (Fig. 69); postocellar area about as long as broad; lower interocular distance  $1.2\times$  longer than eye length; antennal crests high and close together, separated by distance less than breadth of one (Fig. 69). Mesoscutellum sharply protuberant, produced into a high conical projection (Fig. 62). Hind basitarsus subequal in length to length of remaining tarsal segments combined. Tarsal claws with inner tooth shorter than outer tooth, with basal lobe. Hind wing with cell M. Lancet similar to Fig. 82, with serrulae flat.

*Male*.—Length, 9.5 mm. Color similar to female. Genitalia as in Figs. 95, 96.

*Holotype*.—♀ "La Amistad, Sector Altamira, Cerro Biolley, Prov. Punta., Costa Rica, 1800 m, Nov. 1993, R. Delgado, L S 572400.332700, #2456," "Costa Rica INBIO CRI001 938715" (INBio).

*Paratypes*.—Costa Rica: Estac. Pitilla, 700 m, 9 km S Santa Cecilia, Guanac. Pr., Jul. 1988, GNP Biodiversity Survey 330200.380200, Costa Rica INBIO CRI000

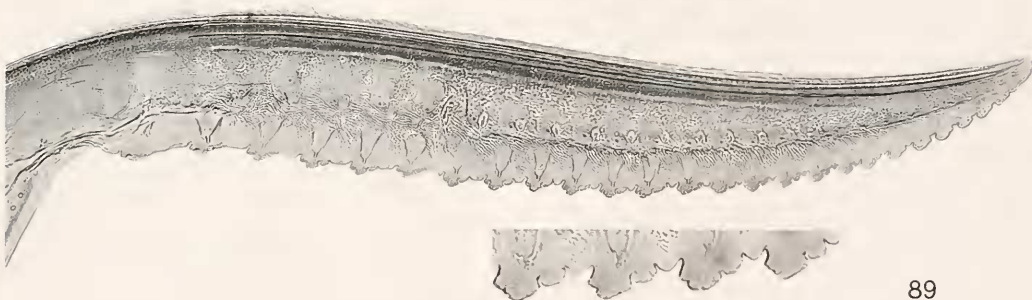




87



88



89



90

Figs. 87–90. *Probleta*, female lancets. 87, *P. nigropunctata*. 88, *P. collarata*. 89, *P. malaisei*. 90, *P. bicolor*.

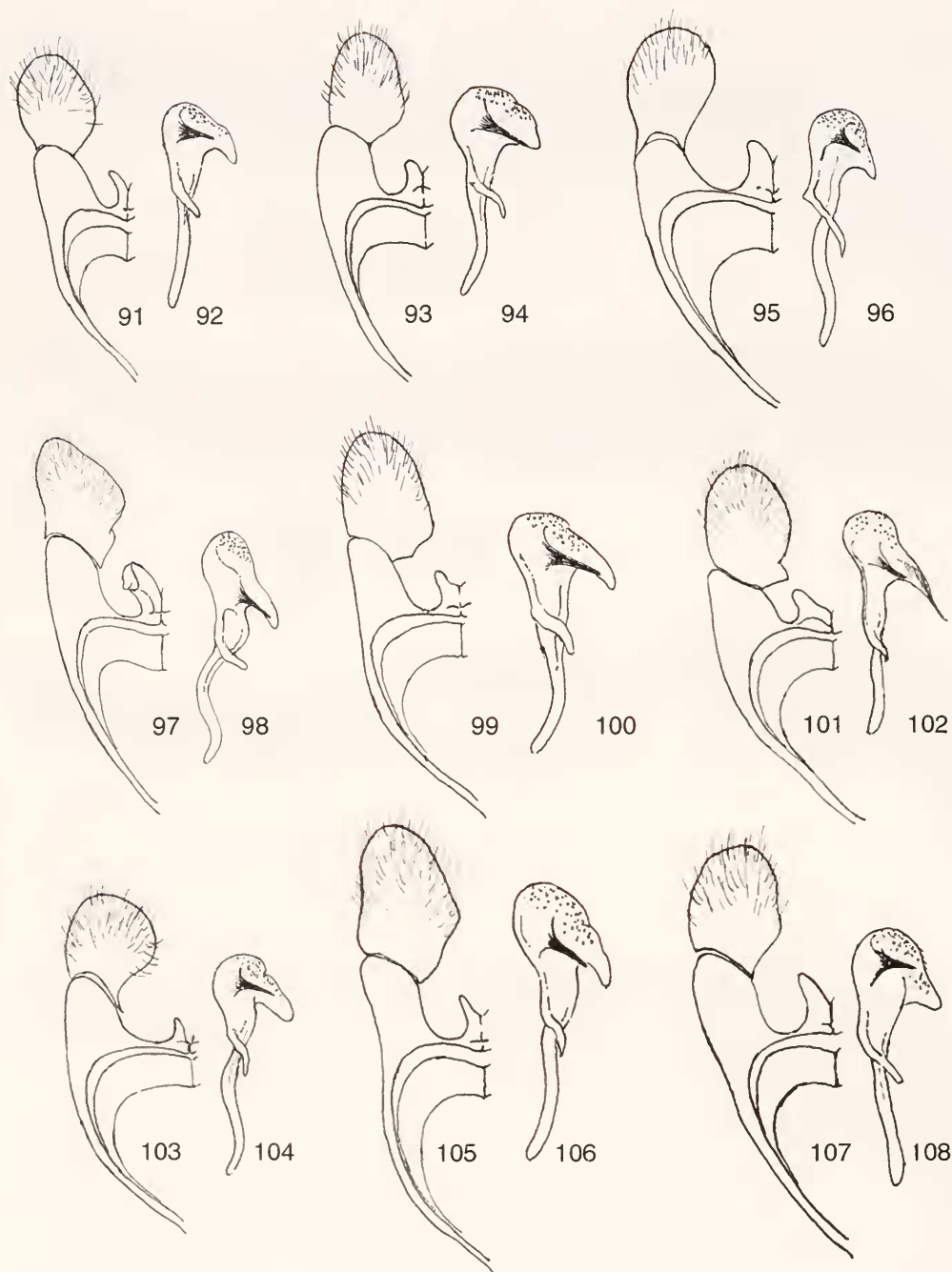
129622 (1 ♀); San José, San Francisco, 1100 m, II-1988, col. P. Wiesner (1 ♂) (Washington; Universidad de Costa Rica).

*Etymology*.—The decorative bright, con-

trasting coloration of the body and wings is the basis for the name "*decorata*."

*Remarks*.—The bicolored wings with the black apical portion of the forewing beginning at the middle of the stigma, the most-





Figs. 91–108. *Probleta*, male genitalia. 91, Harpe and parapenis of *P. malaisei*. 92, Penis valve of *P. malaisei*. 93, Harpe and parapenis of *P. wygodzinskyi*. 94, Penis valve of *P. wygodzinskyi*. 95, Harpe and parapenis of *P. decorata*. 96, Penis valve of *P. decorata*. 97, Harpe and parapenis of *P. nigropunctata*. 98, Penis valve of *P. nigropunctata*. 99, Harpe and parapenis of *P. bicolor*. 100, Penis valve of *P. bicolor*. 101, Harpe and parapenis of *P. mazoua*. 102, Penis valve of *P. mazoua*. 103, Harpe and parapenis of *P. nicklei*. 104, Penis valve of *P. nicklei*. 105, Harpe and parapenis of *P. collariata*. 106, Penis valve of *P. collariata*. 107, Harpe and parapenis of *P. disunctiva*. 108, Penis valve of *P. disunctiva*.

ly black mesothorax, and the elevated, conical mesoscutellum separate this species from other *Probleta*. The high projection of the mesoscutellum is not known in other species of *Probleta*.

**disiunctiva** (Konow). Bolivia; Peru

\**Eriocampa disiunctiva* Konow 1902: 140. ♀.

"Peru (Vilcanota)" (Eberswalde, ♀).—

Oehlke and Wudowenz 1984: 378 (holotype).

*Netroceros disiunctivus*: Konow 1905: 101 (*disiunctivus* in index, p. 152).

*Probleta disiunctivus*: Konow 1908b: 161 (*disiunctivus*).—Forsius 1925: 27.—Smith 1979b: 11.

*Female, male*.—Length, 7.0 mm. Antenna, head, and mouthparts black, apex of mandible reddish. Thorax orange, sometimes with a black triangular mark on mesoprescutum. Legs orange; foretarsus black with basitarsus entirely or with basal half orange; midtarsus with apex of segments 2–4 black, basitarsus with basal half orange; hind tarsus and about apical half of hind tibia black. Abdomen orange with apical 3 segments black. Wings uniformly, lightly infuscated; veins and stigma black. Antennal length  $1.6\times$  head width; apical 4 segments  $1.4\times$  length of 3rd segment; 6th segment about  $2.0\times$  longer than broad. Clypeus deeply, circularly emarginated for about  $\frac{3}{4}$  its medial length, lateral lobes rounded (similar to Fig. 80); labrum about  $2.3\times$  broader than long, with base exposed and anterior margin nearly truncate. Head from above strongly narrowing behind eyes (similar to Fig. 63); postocellar area slightly longer than broad; lower interocular distance subequal to eye length; antennal crests high, separated by distance of much less than one. Hind basitarsus slightly longer than length of remaining segments combined. Tarsal claw with basal lobe. Hind wing with cell M. Male genitalia in Figs. 107, 108. Lancet not examined.

*Remarks*.—This species was not in Malaise's (1949) key. It is about 7.0 mm long, smaller than most *Probleta*. Because there is some variation in the amount of black

on the mesonotum, I have taken it out in two places in the key. This species may be confused with *P. nigropunctata* and *P. shannoni* because of their similar coloration. Both those species are large, 10 mm or more in length, and *P. shannoni* has large, lobelike serrulae (Fig. 85) and *P. nigropunctata* has very minute rounded serrulae which are far apart (Fig. 87).

Konow did not state how many specimens he had. The lectotype, here designated to fix the identity of this species, is the specimen at Eberswalde, labeled "Peru, Vilcanota," "Coll. Konow," "Holotype" (red), "*Probleta disiunctiva* Knw., Peru," and "Typus" (red). The abdomen is missing.

*Material examined*.—BOLIVIA: Santa Cruz, Buena Vista, 8.VII.1973 (1 ♀, Tucumán). PERU: Vilcanota (lectotype); Loreto, Pucallpa; Monson Valley, Tingo Maria, 4.VI.1963 (1 ♀, London); 20 mi W Pucallpa (1 ♀, San Francisco).

**frenata** Konow. Colombia; Peru; Surinam

\**Probleta frenata* Konow 1908b: 163. ♂. "Peru (Pachitea)" (Eberswalde, ♂).—Forsius 1925:

27.—Malaise 1949: 26 (Surinam, Upper Ma-

roni River).—Oehlke and Wudowenz 1984:

382 (♂ holotype).—Smith 1979b: 11.

*Female, male*.—Length, 8.0 mm. Antenna and head black with scape, pedicel, and antennal crests, and supraclypeal area orange; clypeus, except extreme base, and all mouthparts pale orange; apex of mandible dark brown. Thorax orange. Legs orange with segments 2–4 of midtarsus blackish and hind tarsus black except apex of 5th segment. Abdomen orange with posterior margin of 5th and segments 6 or 7 to apex black, anterior margin of 6th segment may be orange. Forewing yellow with apex from apex of stigma black; stigma and veins in yellow part orange, except subcosta and vein M black; veins black in black apex; hind wing yellowish with apex infuscated. Antennal length  $1.5\times$  head width; 6th segment  $2.0\times$  longer than broad; apical 4 segments about  $1.6\times$  lon-

ger than 3rd segment. Clypeus deeply emarginated for about  $\frac{3}{4}$  its medial length, lobes narrow, somewhat triangular; labrum about  $1.6\times$  broader than long, exposed at base, anterior margin rounded. Head from above narrowing behind eyes; antennal crests high and closer together than width of one; lower interocular distance subequal to eye length; postocellar area about as long as broad. Hind basitarsus slightly longer than remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell.

*Remarks.*—From other species with forewings yellow and the apex black, *P. frenata* can be distinguished by its completely black hind tarsus and its orange yellow first and second antennal segments, antennal crests, supraclypeal area, and mouthparts.

Konow did not state how many specimens he had. The lectotype, here designated to fix the identity of the species, is the male at Eberswalde labeled "Pachitea, Peru," "Coll. Konow," "Holotypus" (red), "Probleta frenata Knw., Peru," "Typus" (red). The flagellum of both antennae are missing.

*Material examined.*—COLOMBIA: Amazonas, PNN Amacayacu Matamata,  $3^{\circ}23'S$ ,  $70^{\circ}6'W$ , 150 m, Malaise 4/16/01–5/7/01, D. Chota, leg. M. 1875 (1 ♀; Instituto Humboldt, Bogotá). PERU: Pachitea (lectotype). SURINAM: Nickerie River, Blanche-Marie-Falls, Meteocamp, Surinam, 9–16-II-1971 (1 ♀, Leiden); Nassau Mts., Surinam, 9-III-1949 (1 ♀, Leiden); Suriname, 1.4.1962 (1 ♀, Leiden).

**fulvonigra** Malaise, new combination.  
Brazil (Rio de Janeiro)

\**Protoprobleta fulvoniger* Malaise 1949: 30–31, fig. 5A, 6D, 8A. ♀. "Brazil (Grajahu near Rio de Janeiro)" (Stockholm, ♀).—Smith 1979b: 11.

*Female.*—Head and antenna black. Thorax orange. Legs orange with tarsi except spot on forebasitarsus, apical two-thirds of hind tibia, and apical half of midtibia

black; foretibia indistinctly infuscated towards apex. Abdomen orange with 6th segment to apex and sheath black. Wings uniformly infuscated; veins and stigma black. Antenna with 6th segment  $2.0\times$  longer than broad. Labrum about as broad as long, anterior margin rounded, base covered by clypeus; clypeus shallowly incised, emargination about half medial length of clypeus. Postocellar area about as long as broad. Hind basitarsus subequal in length to following tarsal segments combined. Tarsal claws with basal lobe. Hindwing with cell M.

*Remarks.*—This is one of two species described in *Protoprobleta* by Malaise (1949), the other being *P. nigra*. Those previously placed in *Protoprobleta* were characterized by the shallower emargination of the clypeus (similar to Figs. 77, 78), about half the medial length of the clypeus, the base of the labrum covered by the clypeus, not exposed, and the labrum about as broad as long, not broader than long as in most *Probleta* species. Malaise described this species from "1 ♀." The holotype is labeled "8-6-1942 Grajahu, Rio de Janeiro, Lopes & Wygod."; "TYPUS" [red]; "Protoprobleta n. gen. fulvoniger n. sp. Malaise det 1944"; "96 79"; "Riksmuseum Stockholm." This type is the only specimen examined.

**gracilicornis** Konow. Brazil (Pará)

\**Probleta gracilicornis* Konow 1908b: 162–163. ♀. "Brasilia (Pará)" (Eberswalde, ♀).—Forsius 1925: 27.—Malaise 1949: 26.—Oehlke and Wudowenz 1984: 385 (♂ holotype).—Smith 1979b: 11.

*Female.*—Length, 8.5 mm. Antenna, head, and mouthparts black. Thorax orange. Legs orange; foretarsus with apex of segments 1 and 2 and all of segments 3 and 4 black; midtarsus with segments 2–4 black; hind tarsus and extreme apex of hind tibia black. Abdomen orange with apical segment and sheath black. Forewing mostly hyaline, slightly darker beyond apex of stigma; costa and stigma yel-

low with extreme apex of stigma blackish, other veins brown; hind wing hyaline with all veins brown. Antennal length  $1.8\times$  head width; apical 4 segments about  $1.6\times$  longer than 3rd segment; 6th segment  $2.0\times$  longer than broad. Clypeus deeply, circularly emarginate, for over  $\frac{3}{4}$  its medial length (Fig. 72); labrum about  $2.0\times$  broader than long, with base exposed (Fig. 72), and anterior margin slightly rounded. Head from above narrowing behind eyes (Fig. 71); lower interocular distance subequal to eye length; postocellar area slightly broader than long; antennal crests high, closer together than width of one (Fig. 71). Hind basitarsus slightly longer than length of remaining segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Lancet in Fig. 81, serrulae rounded.

*Remarks.*—The rounded serrulae of the lancet differ from the flat serrulae of *P. corona*, *P. columbiana*, and *P. bilaux*, other species with partly yellow wings. Also in *P. gracilicornis* the thorax is entirely orange, the apex of the hind tibia is black, and the forewing is more hyaline with only the costa and base of the stigma orange. This species is near *P. disiunctiva*, but in *P. gracilicornis* the wings are usually clear with the base of the stigma pale orange and the hind tibia is black only at its extreme apex. In *P. disiunctiva*, half or more of the hind tibia is black and the wings are black.

Konow did not state how many specimens he had. The lectotype, here designated in order to fix the identity of the species, is a female at Eberswalde, labeled "Brasil, Para, 18.3.1902, Ducke," "Coll. Konow," "Holotypus" (red), "Probleta gracilicornis Knw., Brasil," "Typus" (red).

*Material examined.*—BRAZIL: Pará (lectotype); "Santarem" (1) and same with date Apr. 1919 (1) (both at Pittsburgh) and "Pará, Sta Isabel" (1 ♀, Belém). The specimen from Sta Isabel has the wings darker but the stigma is pale brown, the wings

are slightly paler at the base, and only the extreme apex of the hind tibia is black.

**grossoensis** Smith, new species. Brazil (Mato Grosso)

*Probleta grossoensis* Smith

*Female.*—Length, 10.5 mm. Antenna and head black; clypeus, labrum, and palpi whitish; apex of mandible dark reddish. Thorax yellow orange. Legs yellow orange with midtarsus (except apical segments), apical  $\frac{1}{4}$  hind tibia, and all hind tarsus black. Abdomen yellow orange with apical 4 segments and sheath black. Wings yellow with apices beyond stigma infuscate; veins reddish yellow and stigma except for extreme apex reddish yellow; veins in infuscated apex dark brown to black. Antennal length about  $1.7\times$  head width; apical 4 segments  $1.6\times$  length of 3rd segment, 6th segment  $2\times$  or less longer than broad. Clypeus deeply, broadly circularly emarginated for about  $\frac{2}{3}$  its medial length, lateral lobes rounded and far apart (Fig. 73); labrum with anterior margin slightly rounded, about  $2.0\times$  broader than long, its base not exposed. Head from above broad behind eyes (Fig. 73); lower interocular distance  $1.1\times$  greater than eye length; postocellar area slightly longer than broad; antennal crests high and close together, separated by distance less than breadth of one (Fig. 73). Hind basitarsus slightly longer,  $1.1\times$ , than length of remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Sheath rounded at apex in lateral view. Lancet in Fig. 80, with flat serrulae.

*Male.*—Unknown.

*Holotype.*—♀, "Jaciara, Mato Grosso, Brasil, Nov. 1963, M. Alvarenga" (Washington).

*Etymology.*—Named for the state where collected, Mato Grosso.

*Remarks.*—This species is separated from other *Probleta* species with yellow wings by the black apex of the forewing, the black hind tarsus, black apical quarter



of the hind tibia, the white labrum, clypeus, and palpi, flat serrulae, and broad head behind the eyes in dorsal view.

**langei** Konow. Brazil (Rio de Janeiro)

\**Probleta Langei* Konow 1908b: 162. ♀. "*Brasilia*" (Eberswalde, ♀).—Forsius 1925: 27.—Malaise 1949: 29, fig. 5A, 6F (♂ allotype, Rio de Janeiro).—Oehlke and Wudowenz 1984: 391 (♂ holotype).—Smith 1979b: 11.

*Female, male*.—Length, 11.0–12.0 mm. Antenna and head black; basal 2 segments of labial palpus and 4th segment of maxillary palpus white. Thorax orange with meso- and metanotum mostly black in male, orange areas around sutures and spot on anterolateral corners of mesoprescutum and lateral, downturned areas of mesonotal lateral lobes in female; blackish spot on each side of posterior portion of mesosternum. Legs orange with apical 3 foretarsal segments, midtarsus, except base dark orange, hind tarsus, and apical half of hind tibia black. Abdomen orange with extreme posterior margin of 7th segment and apical 2 segments and sheath black. Wings hyaline to lightly uniformly infuscated; veins and stigma black. Antennal length nearly  $2.0\times$  head width; apical 4 segments  $1.4\times$  longer than 3rd segment; 6th segment about  $2.2\times$  longer than broad. Clypeus emarginated for about  $\frac{3}{4}$  its medial length, lateral lobes narrow, somewhat triangular; labrum about  $2.0\times$  broader than long, exposed at base, anterior margin slightly rounded. Antennal crests low, rounded, separated by distance about equal to width of one; lower interocular distance subequal to eye length; postocellar area slightly broader than long, about quadrate. Hind basitarsus slightly longer than remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Apex of lancet with flat serrulae (as seen in type where lancet is slightly exposed).

*Remarks*.—Konow did not state how many specimens he had. The female at Eberswalde is hereby designated lectotype

to fix the identity of the species; it is labeled "*Brasilia* Mus. Lange," "Coll. Konow," "Holotypus" (red), "*Probleta Langei* Knw., Brasil." "Typus" (red). Malaise designated a male allotype from "Brazil Rio de Janeiro" which is similar in coloration to the female. I have not seen specimens other than Konow's type. The infuscated wings, mostly black meso- and metanotum, deeply emarginated clypeus, the black apical two abdominal segments, and flat serrulae will help distinguish this species. It is separated from other species in the key to species.

**malaisei** Smith, new species. Brazil (Paraná, Santa Catarina)

*Probleta malaisei* Smith.

*Female*.—Length, 6.0–6.5 mm. Antenna, head and mouthparts black; apex of mandible dark reddish. Thorax yellow orange with mesosternum (except for mesal stripe), lower  $\frac{2}{3}$  mesepisternum, triangular spot on center of mesoprescutum (sometimes reduced or nearly absent), mesonotal lateral lobes, mesoscutellum, and metanotum except for central area, black. Legs orange yellow with midtarsus, hind tibia, and hind tarsus black; foretarsus infuscated. Abdomen yellow orange with terga 5 and 6 laterally, segments 7 to apex, and sheath black; small lateral dots on terga 2–4 black. Wings uniformly, moderately black infuscated; veins and stigma black. Antennal length  $1.8\times$  head width; apical 4 segments  $1.3\times$  length of 3rd segment; 6th segment stout, about as long as broad. Clypeus with deep, broadly oval emargination for nearly  $\frac{1}{5}$  its medial length, lateral lobes rounded, narrow, far apart (Fig. 76); labrum short, front margin truncate, more than  $3.0\times$  broader than long, with base exposed (Fig. 76). Head from above broad behind eyes (Fig. 75); postocellar slightly broader than long; antennal crests high, separated by distance of about equal to one (Fig. 75). Hind basitarsus slightly longer than length of fol-

lowing tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Sheath narrow, rounded at apex in lateral view. Lancet in Fig. 89, with rounded serrulae each with one large anterior sub-basal tooth.

*Male*.—Length, 5.5 mm. Coloration similar to female except for mostly brownish mesoscutellum and abdomen which has hypandrium black and black lateral spots on each tergum becoming broader and coalescing at center toward apex. Genitalia as in Figs. 91, 92.

*Holotype*.—♀, "Brazil; Nova Teutonia, F. Plaumann, 20 Apr. 1966" (Washington).

*Paratypes*.—BRAZIL: Same locality as holotype, 19 Apr. 1966 (1 ♀), 28-III-1966 (1 ♂), V-1975 (1 ♂), V-1976 (3 ♂), May 1977 (1 ♀), Aug. 1977 (1 ♀); Paraná, Rincao, II-22-69, C. Porter, A. Garcia (1 ♀) (Washington, Cambridge).

*Etymology*.—Named for René Malaise who provided the first comprehensive study of this genus.

*Remarks*.—This species has the wings uniformly infusate, the thorax partly black, the hind tibia black, and the serrulae rather deep with large anterior and posterior subbasal teeth. It resembles *P. collariata* except for the serrulae of the lancet which are much deeper in *P. malaisei* (see Figs. 88, 89).

**mazona** Smith, new species. Brazil (Amazonas).

*Probleta mazona* Smith.

*Female*.—Unknown.

*Male*.—Length, 7.0 mm. Antenna and head black with extreme tips of lateral lobes of clypeus and labrum more brownish. Thorax orange with mesoscutellum and metascutellum black. Legs orange with fore tibia and tarsus dark orange, mid- and hind tibiae and tarsi black, and extreme apex of hind femur black. Abdomen orange with segments 5 to apex black. Wings darkly, uniformly infuscated; veins and stigma black. Antennal

length  $1.6\times$  head width; apical 4 segments  $1.5\times$  length of third segment. Clypeus shallowly emarginated, emargination about half medial length of clypeus, with rounded lateral lobes; labrum rounded, about  $2.0\times$  broader than long, its base covered by clypeus (Fig. 77). Head from above narrowing behind eyes; antennal crests low, far apart, separated by distance greater than breadth of one (Fig. 77). Hind basitarsus subequal in length to length of remaining tarsal segments combined. Tarsal claws with basal lobe. Genitalia in Figs. 101, 102.

*Holotype*.—♂, "Brasil: Amazonas, Hwy ZF2, km 20.7, ca 60 km N Manaus,  $02^{\circ}30'S$ ,  $060^{\circ}15'W$ , 16 Aug. 79—Terra Firme," "Canopy fogging project, TRS#08. Col. by hand, Adis, Erwin, Montgomery et al. collectors" (Washington).

*Etymology*.—The name stems from Amazonas, lacking the first and last letters.

*Remarks*.—This species is separated from other species with the shallowly emarginated clypeus by its orange thorax with the mesoscutellum and metascutellum black and the black mid- and hind tibiae. This is the only species known with the dorsal process of the penis valve narrow and acute (Fig. 102) rather than rounded.

**nicklei** Smith, new species. Peru.

*Probleta nicklei* Smith.

*Female*.—Unknown.

*Male*.—Length, 8.2 mm. Antenna and head black. Thorax orange. Legs (forelegs missing) orange with tibiae and tarsi black and extreme apex of hind femur black. Abdomen orange with segments 6 to apex black. Wings uniformly darkly infuscated; veins and stigma black. Antennal length  $1.6\times$  head width; apical 4 segments  $1.4\times$  length of 3rd segment; 6th segment slightly less than  $2.0\times$  longer than broad. Clypeus shallowly emarginated, emargination about half medial length of clypeus, with

rounded lateral lobes; labrum rounded, about  $2.0\times$  broader than long, its base covered by clypeus (Fig. 78). Head from above rounded and narrowing behind eyes (similar to Fig. 63); lower interocular distance subequal to eye length; postocellar area as long as broad; antennal crests low and far apart, separated by distance greater than one. Hind basitarsus slightly shorter than,  $.9\times$ , length of remaining tarsal segments combined. Tarsal claw with 3 teeth, without basal lobe (Fig. 61). Genitalia in Figs. 103, 104.

*Holotype*.—♂, "Peru: Loreto Prov.,  $3^{\circ}23'S$ ,  $72^{\circ}46'W$ , Explorama Lodge, 80 km NE Iquitos on Rio Yanamono (1 km upriver from Rio Amazon) (D.A. Nickle & J.L. Castner, colls) VIII-31–IX-14-1996, EARTHWATCH Team 21," "Lake Trail, Canopy Fogging, Site 1, 6 am" (Washington).

*Etymology*.—Named for Dr. David A. Nickle, collector of the specimen and colleague in the Systematic Entomology Laboratory, USDA.

*Remarks*.—This is one of three species where the basal lobe of the tarsal claw is modified into a third tooth, the other species being *P. nigropunctata* and *P. siceva*. *Probleta nigropunctata* has the clypeus deeply emarginated with the base of the labrum exposed, and is a larger species (ca. 10 mm long). *Probleta siceva* has the head from above broad behind the eyes (similar to Fig. 64).

**niger** (Malaise), **new combination**. Brazil

\**Protoprobleta niger* Malaise 1949: 31, fig. 8B. ♀. "Brazil (S. Rita)" (Stockholm, ♀).—Smith 1979b: 11.

*Female*.—Antenna and head black. Thorax black. Legs orange with apex of foretarsus, mid- and hind tarsi entirely, and apical two-thirds of hind tibia black. Wings uniformly infuscated. Antenna stout; 6th segment  $1.5\times$  longer than broad. Clypeus somewhat shallowly emarginated, emargination half or less medial length

of clypeus; labrum about as broad as long, anterior margin rounded, base covered by clypeus. Postocellar area subquadrate. Hind basitarsus subequal in length to remaining tarsal segments combined.

*Remarks*.—The description is somewhat abbreviated because of incomplete notes on the type. This is one of two species described by Malaise with the more shallowly emarginated clypeus and long labrum (see Remarks under *P. fulvonigra*). However, three more species are known in this group. *P. mazona*, *P. nicklei*, and *P. siceva*. *Probleta niger* is distinguished from those species by its predominately black color. The thorax is entirely or mostly orange in the other species, and the tarsal claws of *P. nicklei* and *P. siceva* are trifid.

Malaise described this species from "1 ♀." The holotype is labeled "S. Rita"; "F. Sahlb."; "TYPUS" [red]; "Probleta niger n. gen, n. sp. Malaise det 1944"; "97-79"; "Riksmuseum Stockholm." I have not seen additional specimens.

**nigropunctata** Malaise. Brazil (D.F., Minas Gerais)

\**Probleta nigropunctatus* Malaise 1949: 29, fig. 8D. ♀. "Brazil (Minas Geraes)" (Stockholm, ♀).—Smith 1979b: 11.—Smith 1981: 288 (D.F.).

*Female, male*.—Length, female, 10.5 mm; male, 10.0 mm. Antenna, head, and mouthparts black, clypeus brownish. Thorax orange with triangular black spot on mesoprescutum, black spot on each side of mesosternum, and mesepimeron blackish. Legs orange with foretarsus and mid- and hind tibiae and tarsi black. Abdomen with basal 5 terga and basal 6 sterna orange, remainder of abdomen black. Wings nearly hyaline, very lightly, uniformly infuscated, veins and stigma black. Scattered punctures on head, especially postocellar area, genae, upper orbits and occipital area. Antennal length  $1.6\times$  head width; 6th segment stout,  $1.5\times$  longer than broad; apical 4 antennal segments  $1.6\times$  longer



than 3rd segment. Clypeus deeply emarginated for about  $\frac{3}{4}$  its medial length; labrum  $2.5\times$  broader than long, with base exposed (similar to Fig. 70); head from above broad behind eyes (Fig. 64); postocular area as long as broad; lower interocular distance  $1.2\times$  greater than eye length; antennal crests high and close together, separated by distance less than breadth of one (Fig. 64). Hind basitarsus slightly longer,  $1.1\times$ , than length of remaining segments combined. Tarsal claws with 3 teeth, basal lobe absent (Fig. 61). Hind wing with cell M absent. Lancet in Fig. 87, long, with 25+ serrulae and serrulae low, rounded, and far apart. Male genitalia in Figs. 97, 98.

*Remarks.*—This species, as well as *P. siceva* and *P. nicklei*, have trifold tarsal claws. *Probleta nigropunctata*, however, has a distinctive lancet which is long and has very low, rounded serrulae (Fig. 87), the thorax with the mesoprescutum black and with paired black spots on the mesosternum, and a very deeply emarginated clypeus exposing the base of the labrum.

Malaise described this species from "1 ♀." The holotype female is labeled "Minas Geraes"; "TYPUS" [red]; "*Probleta nigripuncta* type n. sp. Malaise det 1947."

*Material examined.*—BRAZIL: Minas Gerais (holotype). Res. Ecol. IBGE, D.F., Brazil, Km 0 Br 251, 14-III-1979, Bráulio Dias, Tenda Malaise Tanque (1 ♀); same locality, 12-XII-85 (1 ♂); same locality, Tenda Malaise Cerrado, 28-II-1979 (1 ♀).

**sahlbergi** Malaise. Brazil (Rio de Janeiro)

*Probleta collariata*: Konow 1908a: 86–87 (1 ♀ and 1 ♂ only, other ♂ is lectotype of *P. collariatus*).

\**Probleta sahlbergi* Malaise 1949: 30, fig. 7E. ♀. "Brazil (Petropolis near Rio de Janeiro)" (Stockholm, ♀).—Smith 1979b: 11.

*Female.*—Antenna, head, and mouthparts black. Thorax orange; sternum to lower  $\frac{2}{3}$  of mesepisternum (line on meson of sternum orange), most of mesepimeron except upper corner, mesonotum except

V-shaped mark on mesoprescutum, posttergite, and extreme lateral margins of lateral lobes orange, and metanotum black. Legs yellow orange with segments 3 and 4 of mid- and hind tarsi and extreme tip of hindtibia and all hind tarsus black except basal third or so of basitarsus dark orange. Abdomen black with basal 3–4 sterna suffused with brown, paler than rest of abdomen. Wings very lightly uniformly infuscated black; veins and stigma black. Antennal length  $1.7\times$  head width; 6th segment  $1.5\times$  longer than broad. Lower interocular distance a little less than eye length. Eyes large, head from above narrowing behind eyes. Hind basitarsus equal in length to remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M.

*Male.*—Coloration similar to that of female except mesopleuron and mesonotum black; apical half to third of hind tibia black; and apical 3–5 fore- and midtarsal segments black.

*Remarks.*—This species is similar to *P. collariatus* except, in *P. collariatus*, the hind tibia and tarsus are entirely black.

Malaise described this species from "1 ♀." The holotype female is labeled "Petrop. Brs."; "F. Smith"; "TYPUS" [red]; "*Collariatus* det Malaise 47" [top] "*Probleta* n. sp. ? ♀ Konow det." [reverse]; "*Probleta sahlbergi* type n. sp. Malaise det 1947."

*Material examined.*—BRAZIL: Itatiaya, 700 m, Est. do Rio, Brazil, "22-2-933" (1, Oswaldo Cruz). A male and a female labeled as types of *Probleta collariatus* from Rio de Janeiro (see *P. collariata*), are labeled "9-72, Rio Janeiro," "Coll. Camille Van Volxem," "*Probleta collariata* n. sp. Type det Konow 1907," "Type." The male has the abdomen missing, but it is in a paper triangle near the specimens and has extra labels "410" and "*Probleta sahlbergi* m. Malaise 57"; Petropolis (holotype).

**shannoni** Smith, new species. Brazil (Rio de Janeiro)

*Probleta shannoni* Smith.

*Female.*—Length, 10.2 mm. Antenna,



head, and mouthparts black; apex of mandible dark reddish. Thorax yellow orange. Legs orange yellow with apical  $\frac{1}{4}$  hind tibia, hind tarsus, apical  $\frac{1}{3}$  midbasitarsus, midtarsal segments 2–4, and foretarsal segments 4 and 5 black. Abdomen yellow orange with lateral areas of tergum 5 and segments 6 to apex and sheath black. Wings uniformly darkly, black infuscated; veins and stigma black. Antennal length  $1.5\times$  head width; apical 4 segments  $1.5\times$  longer than 3rd segment and equal to segments 4 and 5 combined; 6th segment  $2.0\times$  longer than broad. Clypeus deeply emarginated for about  $\frac{3}{4}$  its medial length; labrum  $2.0\times$  broader than long, its base exposed. Head from above broad behind eyes (similar to Fig. 67); postocellar area slightly longer,  $1.1\times$ , than broad; lower interocular distance slightly greater, less than  $1.1\times$ , than eye length; antennal crests high, close together, separated by distance of less than one. Hind basitarsus slightly longer,  $1.1\times$ , than length of following tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M. Sheath rounded at apex in lateral view. Lancet in Fig. 85, with deep, rounded serrulae.

*Male*.—Unknown.

*Holotype*.—♀, "Rio de Janeiro, Dist. Federal, Brazil," "Setembro 1938," "Serviço Febre Amarela M.E.S., Bras." "R. C. Shannon coll." (Washington).

*Etymology*.—Named for the collector, R.C. Shannon.

*Remarks*.—This species is similar to *P. bicolorata* except the basal abdominal segments are orange yellow, only the apical  $\frac{1}{4}$  of the hind tibia is black, and the lower interocular distance is about subequal to the eye length. The serrulae of the lancet are very deep (Fig. 85), much more so than those of most *Probleta*. From other species with infuscated wings and an entirely orange thorax, *P. shannoni* is separated by the partly orange hind tibia and the deep, rounded serrulae of the lancet.

**siceva** Smith, new species. Peru.

*Probleta siceva* Smith.

*Female*.—Length, 9.3 mm. Antenna (only scape and pedicel present) and head black. Thorax orange. Foreleg orange with tibia and tarsus a darker orange; mid- and hind legs orange with tibiae and tarsi black. Abdomen orange with segment 6 black above and segments 7 to apex black. Wings uniformly darkly infuscated; veins and stigma black. Clypeus shallowly emarginated, emargination about half medial length of clypeus, with rounded lateral lobes; labrum rounded, about  $2.0\times$  broader than long, its base covered by clypeus (similar to Fig. 78); head from above broad behind eyes (similar to Fig. 64); lower interocular distance slightly longer,  $1.1\times$ , than eye length; postocellar area about as broad as long; antennal crests low, far apart, separated by distance greater than width of one. Hind basitarsus subequal in length to length of remaining tarsal segments combined. Tarsal claw with 3 teeth, basal lobe absent (similar to Fig. 61). Hind wing with cell M present. Lancet in Fig. 90, serrulae pointed at apices, with large subbasal teeth.

*Male*.—Unknown.

*Holotype*.—♀, "Huánuco Peru, Aug, coll. R. Ferreyra" (Cambridge).

*Etymology*.—The name is an arbitrary combination of letters and is to be treated as a noun.

*Remarks*.—The coloration of this species is close to *P. bicolor*, but *P. siceva* has a shallower emargination to the clypeus with the base of the labrum not exposed, tarsal claws with three teeth, and lower serrulae on the apical third of the lancet. *Probleta siceva* may be separated from *P. nicklei* by the head which is broad behind the eyes (similar to Fig. 64) (see key).

**usta** Forsius. Brazil

\**Probleta usta* Forsius 1925: 26–27. ♀. "Südbrasilien" (Stockholm, ♀).—Malaise 1949: 27, fig. 7A.—Smith 1979b: 11.

*Female*.—Length, 9.0 mm. Head and antenna black; palpi brownish yellow. Thorax orange. Legs orange with apical segments of fore- and midtarsus blackish, hind tibia and hind tarsus black. Abdomen black with first segment orange, two following segments yellow at apices and in middle. Forewing clear in basal half; stigma and veins black. Antenna slender, 6th segment  $3\times$  as long as broad. Postocellar area subquadrate, very little longer than broad. Tarsal claw with basal lobe. Hind basitarsus subequal in length of following tarsal segments combined. Hind wing with cell M.

*Remarks*.—This species is close to *P. bicolor*, sharing the uniformly infuscated wings and entirely black hind tibia, but in *P. usta*, the abdomen is almost entirely black above and the antennae are slender with the 6th segment  $3\times$  longer than broad.

Forsius described this species from “1 ♀. Südbราซิล (F. Sahlberg leg.).” Malaise (1949) recorded it from Brazil (Petropolis near Rio de Janeiro). I have not seen additional specimens.

**wygodzinskyi** Malaise. Brazil (Paraná, Rio de Janeiro, Santa Catarina)

\**Probleta wygodzinskyi* Malaise 1949: 28, fig. 7C. ♀, ♂. “Brazil (Rio de Janeiro and Santa Catarina, Nova Teutonia)” (Stockholm, ♀).—Smith 1979b: 11.

*Female, male*.—Length, female 9.0–10.0 mm; male, 8.0 mm. Antenna, head, and mouthparts black. Thorax orange. Abdomen with segments 1–4 orange and 5 to apex black. Legs orange, with extreme apex of midtibia, apical third of hind tibia on outer surface, apical 3 foretarsal segments, and mid- and hind tarsi entirely black. Wings very lightly, uniformly infuscated; veins and stigma black. Antennal length  $1.7\times$  head width; 6th segment  $2.0\times$  longer than broad; apical 4 segments  $1.5\times$  length of 3rd segment. Clypeus deeply, circularly emarginated for  $\frac{3}{4}$  of its

medial length, lateral lobes rounded and far apart (similar to Fig. 66); labrum with anterior margin truncate, about  $2.0\times$  broader than long, with base exposed. Head from above narrowing behind eyes (similar to Fig. 67); lower interocular distance slightly longer,  $1.2\times$ , than eye length; postocellar area as long as broad; antennal crests high, close together, separated by distance of less than breadth of one. Hind basitarsus slightly longer, less than  $1.1\times$ , than length of remaining tarsal segments combined. Tarsal claws with basal lobe. Hind wing with cell M present. Lancet as in Fig. 84, with serrulae low, rounded, close together. Male genitalia in Figs. 93, 94.

*Remarks*.—In *P. wygodzinskyi*, the wings are uniformly infuscate and the thorax entirely orange. It is separated from other species with this combination by having only the extreme apex of the hind tibia black or only outer surface of apical third black, and by comparison with the figures of the female lancets and male genitalia. Other species with this color combination have the apical quarter or more of the hind tibia entirely black.

Malaise described this species from “1 ♂, 1 ♀.” The female is labeled “Rio de Janeiro, 3.194, Wygod. L.”; “TYPUS” [red]; “*Probleta wygodzinskyi*, n. sp. Malaise det 1947.” The male is labeled “Brasilien, Nova Teutonia, 27°11'B, 52°23'N., 25.3.1931 [?], Fritz Plaumann”; “Allotypus” [red]; “coll. Malaise”; “*Probleta wygodzinskyi*, n. sp. Malaise det. 1947.” Because he did not designate a holotype, I am designating the female labeled as type as the lectotype in order to fix the identity of this species, and the male as a paralectotype.

*Material examined*.—BRAZIL: Rio de Janeiro (holotype); Nova Teutonia, Santa Catarina, Brazil, III.15.1938 (1 ♂, London); II-1966 (1 ♂); 15 Mar. 1966 (1 ♂) IV-1975 (1 ♀) (Washington); Paraná, Prudentópolis, II-23–25-69, C. Porter, A. Garcia (1 ♀, 1 ♂, Cambridge).

## ACKNOWLEDGMENTS

I am grateful to the curators of the following collections for allowing study of material under their care: American Entomological Institute, Gainesville, Florida, USA (Townes Collection); California Academy of Sciences, San Francisco, USA; University of California, Berkeley, USA; University of California, Davis, USA; Canadian National Collection, Ottawa; Carnegie Natural History Museum, Pittsburgh, Pennsylvania, USA; Universidad de Costa Rica, San José; Deutsches Entomologisches Institut, Eberswalde, Germany; Ministério da Saúde, Fundação Instituto Oswaldo Cruz, Rio de Janeiro, Brazil; Illinois Natural History Survey, Champaign, USA; Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium; Instituto Nacional de Biodiversidad, Heredia, Costa Rica; Los Angeles County Museum of Natural History, California, USA; Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA; Muséum National d'Histoire Naturelle, Paris, France; Muséum d'Histoire Naturelle, Genève, Switzerland; Museo Nacional Historie, Asuncion, Paraguay; Museu de Zoologia da Universidade de São Paulo, Brazil; Instituto Nacional de Pesquisas da Amazonia, Museu Paraense Emilio Goeldi, Belém, Pará, Brazil; Naturhistoriska Riksmuseet, Stockholm, Sweden; Polska Akademia Nauk, Instytut Zoologii, Warszawa, Poland; Coleção Zoológica da Reserva Ecológica, Instituto Brasileiro de Geografia e Estatística (IBGE), Divisão de Ecologia Animal, Brasília, D.F., Brazil; Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands; The Natural History Museum, London, UK; Ciencias Naturales y Museo, Universidad Nacional de La Plata, Argentina; Universidad Nacional de Tucumán, Fundación-Instituto Miguel Lillo, Tucumán, Argentina; Universidade Federal do Paraná, Curitiba, Paraná, Brazil; Fundação Zoobotânica do Rio Grande do Sul, Museu de Ciências Naturais, Porto Alegre, RS, Brazil; Instituto Humboldt Santafé de Bogotá, Colombia; Michael J. Sharkey, University of Kentucky, Lexington (a grant from NSF [DEB9972024] helped provide research specimens); Museo ed Istituto de Zoologi, Sistematica della Università di Torino, Italy; Zoologisches Museum, Humboldt-Universität zu Berlin, Germany.

I also extend thanks to Cathy Apgar, Systematic Entomology Laboratory, USDA, Washington, DC for preparing many of the illustrations and arranging the plates. The comments and suggestions of the following reviewers were particularly helpful: H. Goulet, Agriculture and Agri-Food Canada, Ottawa, and T. J. Henry and E. E. Grissell, Systematic Entomology Laboratory, USDA, Washington, DC.

## LITERATURE CITED

Benson, R. B. 1938. On the classification of sawflies (Hymenoptera, Symphyta). *Transactions of the Royal Entomological Society of London* 87: 353–384.

- Brèthes, J. 1919. Tenthredines nouveaux du Chili. *Revista Chilena Historia Natural* 23: 49–52. [printed March 20, 1920?]
- Brullé, A. 1846. Hymenoptera. In Lepeletier, A.L.M., *Histoire Naturelle des Insectes, Hyménoptères*, V. 4, 689 pp.
- Cameron, P. 1878. On some new genera and species of Tenthredinidae. *Transactions of the Entomological Society of London*, pp. 141–152.
- Cameron, P. 1883–1899. Hymenoptera, Tenthredinidae—Chrysididae. In Godman & Salvin, *Biologia Centrali-Americana*, V. 1, 486 pp. (Symphyta, 1883, pp. 1–70; supplement, 1899, pp. 467–469.)
- Cameron, P. 1888. Descriptions of twenty-three new species of Hymenoptera. *Memoirs and Proceedings of the Manchester Literary and Philosophical Society* 1: 159–182.
- Carrillo, L. L., N. Mundaca B., and E. Cisternas A. 1990. *Ametastegia glabrata* (Fallén) especie fitófaga introducida a Chile (Hymenoptera: Tenthredinidae). *Revista Chilena de Entomología* 18: 5–7.
- Chittenden, F. G. and E. S. G. Titus. 1905. The dock false-worm. *United States Department of Agriculture Entomology Bulletin* 54, pp. 40–43.
- Costa, A. 1882. Rapporto preliminare e sommario sulla ricerca zoologica fatte in Sardegna. *Rendu dell' Accademia di Scienze Fisiche e Matematiche di Napoli*, Series 1, 21: 189–201.
- Dalla Torre, C. G. 1894. *Catalogus Hymenopterorum*, v. 1, Tenthredinidae incl. Uroceridae (Phyllophaga & Xylophaga). 459 pp.
- Dustan, A. G. and F. C. Gilliatt. 1916. The dock sawfly. *Proceedings of the Nova Scotia Entomological Society* 1916, pp. 45–48.
- Enderlein, E. 1920 (1919). Symphytologica II. Zur Kenntnis der Tenthredininen. *Sitzungsbericht der Gesellschaft Naturforschenden Freunde zu Berlin*, Nr. 9, pp. 347–374.
- Fallén, C. F. 1808. Forsök till uppställning ock beskrifning på de i Sverige funne arter af insects slaget Tenthredo Linn. *Svenska Vetenskapsakademiens Handlingar* 29: 37–64, 98–124, 219–227.
- Forsius, R. 1925. Wissenschaftliche Ergebnisse der Schwedischen Entomologischen Reise des Herrn Dr. A. Roman in Amazonas 1914–1915. II. Hymenoptera: Tenthredinoidea und Orysoidea. *Arkiv för Zoologi* 17A: 1–27.
- Huber, J. G. and M. J. Sharkey. 1993. Chapter 3. Structure, pp. 13–59. In Goulet, H. and J. T. Huber, eds. *Hymenoptera of the World: An Identification Guide to Families*. Research Branch, Agriculture Canada, Publication 1894/E, 668 pp.
- Jack, J. G. 1893. Notes on *Taxonus nigrisoma* and *T. dubitatus*. *Canadian Entomologist* 25: 183–184.
- Jörgensen, P. 1913. Las Tenthredinoidea (Hym.) de la Republica Argentina. *Anales Museo Nacional de Historia Natural Buenos Aires* 24: 247–288.
- Kirby, W. F. 1882. *List of Hymenoptera in the British*



- Museum. Vol. 1. *Tenthredinidae and Siricidae*. London, 450 pp.
- Kirby, W. F. 1889. Descriptions of new species of Tenthredinidae, Cynipidae, and Chalcididae in the collections of the British Museum. *Annals and Magazine of Natural History* (6) 4: 141–144.
- Klug, J. C. F. 1818 [1814]. Die Blattwespen nach ihren Gattungen und Arten zusammengestellt. *Magazin der Gesellschaft Naturforschender Freunde zu Berlin* 8(4): 273–307.
- Koch, F. 1988. Eine neue Art der Gattung *Macremphytus* MacGillivray, 1908 (Hymenoptera, Tenthredinidae). *Deutsche Entomologische Zeitschrift*, N.F. 35: 199–201.
- Konow, F. W. 1896. Verschiedenes aus der Hymenopteren-Gruppe der Tenthrediniden. *Wiener Entomologische Zeitung* 15: 41–59.
- Konow, F. W. 1899. Neue Tenthredinidae. *Entomologische Nachrichten* 25: 359–366.
- Konow, F. W. 1901. Neue Chalastogastra-Arten. *Természeti Füzetek* 24: 57–72.
- Konow, F. W. 1902. Eine neue *Eriocampa* Htg. *Zeitschrift für Systematische Hymenopterologie und Dipterologie* 2: 140–141.
- Konow, F. W. 1904. Ein neues Tenthrediniden-Genus. *Zeitschrift für Systematische Hymenopterologie und Dipterologie* 4: 3–4.
- Konow, F. W. 1905. Fam. Tenthredinidae. In Wytsman, P., ed. *Genera Insectorum*, Fasc. 29, 176 pp.
- Konow, F. W. 1908a. Die Chalastogastris miscellanea. *Zeitschrift für Systematische Hymenopterologie und Dipterologie* 8: 81–93.
- Konow, F. W. 1908b. Neue mittel- und südamerikanische Tenthrediniden (Hym.). *Zeitschrift für Systematische Hymenopterologie und Dipterologie* 8: 144–163.
- Lepeletier, A. L. M. and A. Serville. 1828. Tenthred. In Olivier, A.G., ed. *Encyclopédie Méthodique Dictionnaire des Insectes*. V. 10. Paris, 832 pp.
- MacGillivray, A. D. 1908. Emphytinae—new genera and species and synonymical notes. *Canadian Entomologist* 40: 356–369.
- Malaise, R. 1949. The genera *Waldheimia*, *Probleta*, and other Neotropical Tenthredinoidea (Hym.). *Arkiv för Zoologi* 42A: 1–61.
- Malaise, R. 1963. Hymenoptera Tenthredinoidea, subfamily Selandriinae, key to the genera of the world. *Entomologisk Tidskrift* 84: 159–215.
- Newcomer, E. J. 1916. The dock false-worm; an apple pest. *United States Department of Agriculture Bulletin* 265, 40 pp.
- Oehlke, J. and J. Wudowenz. 1984. Katalog der in den Sammlungen der Abteilung Taxonomie der Insekten des Institutes für Pflanzenschutzforschung, Bereich Eberswalde (chemals Deutsches Entomologisches Institut), aufbewahrten Typen—XXII (Hymenoptera: Symphyta). *Beiträge zur Entomologie, Berlin* 34: 363–420.
- Rohwer, S. A. 1910. Notes on Tenthredinoidea with descriptions of new species. Paper X, new species of *Empria*. *Canadian Entomologist* 42: 172–175.
- Rohwer, S. A. 1911. The genotypes of the sawflies and woodwasps, or the superfamily Tenthredinoidea. *Technical Series, Bureau of Entomology, United States Department of Agriculture* 20: 69–109.
- Ross, H. H. 1936. The sawfly genus *Empria* in North America (Hymenoptera: Tenthredinidae). *Pan-Pacific Entomologist* 12: 172–178.
- Smith, D. R. 1972a. New combinations for Neotropical sawflies (Hymenoptera: Symphyta). *Proceedings of the Entomological Society of Washington* 74: 258.
- Smith, D. R. 1972b. The South American sawfly genus *Acidiophora* Konow (Hymenoptera: Tenthredinidae). *Proceedings of the Entomological Society of Washington* 74: 417–426.
- Smith, D. R. 1973a. North American sawflies described by Klug and Konow (Hymenoptera: Symphyta). *Proceedings of the Entomological Society of Washington* 75: 28–32.
- Smith, D. R. 1973b. Sawflies of Chile: A new genus and species and key to genera of Tenthredinidae (Hymenoptera: Symphyta). *Proceedings of the Entomological Society of Washington* 75: 402–408.
- Smith, D. R. 1979a. Symphyta, pp. 1–137. In Krombein, K.V., P.D. Hurd, Jr., D.R. Smith, and B.D. Burks, eds. *Catalog of Hymenoptera in America North of Mexico*. Vol. 1. Smithsonian Institution Press, Washington, DC.
- Smith, D. R. 1979b. Nearctic sawflies IV: Allantinae: Adults and larvae (Hymenoptera: Tenthredinidae). *United States Department of Agriculture Technical Bulletin* 1595, 172 pp.
- Smith, D. R. 1981. Symphyta (Hymenoptera: Pergidae, Argidae, Tenthredinidae) collected at the Reserva Ecologia do IBGE, Brasília, DF. *Revista Brasileira de Entomologia* 25: 275–288.
- Smith, D. R. 1988. A synopsis of the sawflies (Hymenoptera: Symphyta) of America south of the United States: introduction, Xyelidae, Pamphiliidae, Cimbicidae, Diprionidae, Xiphydriidae, Siricidae, Orussidae, Cephidae. *Systematic Entomology* 13: 205–261.
- Smith, D. R. 1990. A synopsis of the sawflies (Hymenoptera: Symphyta) of America south of the United States: Pergidae. *Revista Brasileira de Entomologia* 34: 7–200.
- Smith, D. R. 1992. A synopsis of the sawflies (Hymenoptera: Symphyta) of America south of the United States: Argidae. *Memoirs of the American Entomological Society*, No. 39, 201 pp.
- Smith, D. R. In press. A synopsis of the sawflies (Hymenoptera: Symphyta) of America south of the United States: Tenthredinidae (Nematinae, Heterarthrinae, Tenthredininae). *Transactions of the American Entomological Society*



- Smith, D. R. and V. Pérez D'A. 1995. Elenco sistematico y bibliografía de las avispas sesilivientes (Hymenoptera: Symphyta) de Chile. *Gayana Zoológica* 59: 103–108.
- Spinola, M. 1851. Hymenopteros, pp. 153–572. In Gay, C., *Historia física y política de Chile, Zoológica*. Vol. 6.
- Taeger, A. and S. M. Blank. 1996. Kommentare taxonomie der Symphyta (Hymenoptera) (vorarbeiten zu einem katalog der pflanzenwespen, Teil 1). *Beiträge zur Entomologie, Berlin* 46: 251–275.

## INDEX

Valid names are in roman, synonyms in *italic*.

<i>Acideophora</i> .....	150
<i>Acidiophophora</i> .....	150
<i>Acidiophora</i> Konow .....	150
<i>Acidiophorini</i> .....	150
<i>albitegularis</i> Koch, <i>Macremphytus</i> .....	165
<i>albiventris</i> Malaise, <i>Probleta</i> .....	171
<i>Allantini</i> .....	164
<i>Ametastegia</i> A. Costa .....	157
<i>Antholcus</i> Konow .....	162
<i>arizonensis</i> Rohwer, <i>Empria</i> .....	156
<i>articulata</i> (Klug), <i>Ametastegia</i> .....	158
<i>aztecus</i> Cameron, <i>Emphytus</i> .....	158
<i>bicolor</i> (Kirby), <i>Probleta</i> .....	173
<i>bicolorata</i> Malaise, <i>Probleta</i> .....	173
<i>bilanx</i> (Konow), <i>Probleta</i> .....	174
<i>bokoma</i> Smith, <i>Acidiophora</i> .....	151
<i>championi</i> (Cameron), <i>Ametastegia</i> .....	160
<i>chilensis</i> Brèthes, <i>Zarca</i> .....	164
<i>collariata</i> Konow, <i>Probleta</i> .....	175
<i>columbiana</i> (Enderlein), <i>Probleta</i> .....	177
<i>corana</i> Smith, <i>Probleta</i> .....	177
<i>decora</i> Konow, <i>Acidiophora</i> .....	151
<i>decorata</i> Smith, <i>Probleta</i> .....	178
<i>disiunctiva</i> (Konow), <i>Probleta</i> .....	181
<i>Empria</i> Lepeletier and Serville .....	154
<i>Empriini</i> .....	154
<i>eosa</i> Smith, <i>Empria</i> .....	155
<i>Epiprobleta</i> Malaise .....	165
<i>frenata</i> Konow, <i>Probleta</i> .....	181
<i>fulvonigra</i> Malaise, <i>Probleta</i> .....	182
<i>gecera</i> Smith, <i>Acidiophora</i> .....	152
<i>glabrata</i> (Fallén), <i>Ametastegia</i> .....	160
<i>gracilicornis</i> Konow, <i>Probleta</i> .....	182
<i>grossoensis</i> Smith, <i>Probleta</i> .....	183
<i>hansonii</i> Smith, <i>Ametastegia</i> .....	161
<i>konowi</i> Smith, <i>Acidiophora</i> .....	153
<i>langei</i> Konow, <i>Probleta</i> .....	184
<i>larira</i> Smith, <i>Acidiophora</i> .....	153
<i>longipennis</i> (Cameron), <i>Acidiophora</i> .....	154
<i>Macremphytus</i> MacGillivray .....	164
<i>malaisei</i> Smith, <i>Probleta</i> .....	184
<i>manni</i> Smith, <i>Acidiophora</i> .....	154
<i>mazona</i> Smith, <i>Probleta</i> .....	185
<i>mexicana</i> (Cameron), <i>Ametastegia</i> .....	162
<i>mexicana</i> (Cameron), <i>Empria</i> .....	156
<i>nebulosa</i> Jörgensen, <i>Acidiophora</i> .....	151
<i>nicklei</i> Smith, <i>Probleta</i> .....	185
<i>niger</i> (Malaise), <i>Probleta</i> .....	186
<i>nigropunctata</i> Malaise, <i>Probleta</i> .....	186
<i>Probleta</i> Konow .....	165
<i>Protoprobleta</i> Malaise .....	165
<i>sahlbergi</i> Malaise, <i>Probleta</i> .....	187
<i>shannoni</i> Smith, <i>Probleta</i> .....	187
<i>siceva</i> Smith, <i>Probleta</i> .....	188
<i>usta</i> Forsius, <i>Probleta</i> .....	188
<i>varinervius</i> (Spinola), <i>Antholcus</i> .....	164
<i>wygodzinskyi</i> Malaise, <i>Probleta</i> .....	189